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CANCER  
ITS CAUSE AND TREATMENT  
WITHOUT OPERATION





# CANCER

ITS CAUSE AND TREATMENT  
WITHOUT OPERATION



BY

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SECOND EDITION, REVISED

LONDON

G. BELL AND SONS, LTD.

1913



CHISWICK PRESS: CHARLES WHITTINGHAM AND CO.  
TOOKS COURT, CHANCERY LANE, LONDON.

003614

## PREFACE

THE longer I have studied the subject of cancer, the more convinced have I become that if it is ever to occupy a place upon the list of curable diseases the public must be taken into our confidence, and be educated up to the point where they will be enabled to recognize the disease in its initial stage, and to realize the conditions of life which tend to lead up to its development. I have expressed my views on this subject to a number of my medical friends who have had a large experience of the disease, and their unanimous opinion upon this point coincides entirely with my own. Not only is the education of the public a *sine qua non* if we ever hope to be able to reduce the enormous and daily increasing death-rate from cancer, but the general practitioner must also study the question with much greater care than he has hitherto done.

A little over nineteen years ago a most painful, and what I consider a preventable, death from

cancer led me to determine that I would devote as much time as I could possibly command to the study of this terrible disease. Since then it has been my chief aim to endeavour to elucidate the pathogenesis, the pathology, and the treatment of cancer from the medical, as opposed to the surgical, point of view, and I have endeavoured to embody the results of my experience in this volume. Having always looked upon cancer as a preventable disease, and one entirely incident upon civilization, I naturally came to the conclusion that it must have had its origin in some flagrant contravention of hygienic laws. There is nothing unreasonable in the hypothesis that life is really due to a succession of fermentative changes constantly taking place within the cells of the living body, and that these changes, for good or evil, are under the control of certain functional processes, continually going on within certain organs. This argument led me to infer that as the thyroid gland possessed a powerful influence upon the metabolism of epithelial cells, the development of cancer might be due to inefficiency of this gland. It was this hypothesis which led me, in the first instance, to employ thyroid extract as a therapeutic agent in car-



cinoma, and after four years of research it was my privilege to be able to demonstrate that my conclusions were, if not altogether, at least in the main, correct. I therefore felt warranted in bringing my views before the British Gynaecological Society, which I did in April 1896. In the following autumn I contributed a paper to the International Gynaecological Society at Geneva on the same subject. Three years later this Society met at Amsterdam, when I read another paper on the same lines, in which I gave an account of a subsequent series of successful results obtained by this method of treatment. Since then I have been much gratified to find that many of my *confrères* have employed similar therapeutic measures, in many instances with gratifying results. It goes without saying, however, that if cancer is in the future to be classed among the diseases which are curable, either with or without operation, it must in every instance be recognized in its very earliest stages, and treatment commenced without loss of time.

I should like to take this opportunity to express my deep indebtedness to the proprietors and editors of the "Medical Times," "Lancet," "British Medical Journal," "Medical Press and

Circular," "The Medical Review of Reviews and Therapeutic Gazette," without whose valuable assistance it would have been impossible for me to obtain a view of the various aspects which the literature of the subject presents, and which it was only fair that I should place before my readers along with my own views.

R. B.

15 HALF MOON STREET,  
MAYFAIR, W.

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# CANCER

## ITS CAUSE, PREVENTION, AND TREAT- MENT WITHOUT OPERATION

### CHAPTER I

#### INTRODUCTORY

DURING the year 1900 twenty-six thousand and thirty-five deaths from cancer took place in England and Wales; and during the succeeding decade the death rate from cancer per million of all persons living, rose from 676 to 967, and the percentage of deaths from cancer to that from all causes rose from 4.55 to 7.16. These are appalling figures, and all the more so when we consider that 90 per cent. of these deaths might possibly have been avoided. It is not the simple matter of dying that tends to make cancer a disease so much to be dreaded; it is the terrible suffering that precedes the fatal issue in each case which clothes these statistics with such horror. I have said 90 per cent. of this suffering, which at present is terminated only by

death, might have been avoided. This may seem a very bold statement, yet I am convinced that, were the public properly educated and the medical profession sufficiently alert, the disease could, in the vast majority of cases, be detected in its earlier stages. Now it is in these circumstances, and these only, that a cure may be confidently looked for; and that this desirable end may be accomplished in the initial stage of the disease I have not the slightest hesitation in averring. Nay, more: even when the disease has made considerable progress, there may still be ground for hope. Everyone who has come much in contact with patients suffering from this terrible disease must have observed how prone they are to remain reticent on the subject, foolishly refraining from making their fears known, thus allowing valuable time to elapse, during which period the disease may have, in all probability, ceased to be a local affection—which it invariably is in the first instance—and have invaded neighbouring tissues.

It has often been remarked that hesitation in seeking advice in such circumstances is a symptom of cancer. This, I need hardly say, is far from being correct. The explanation is that the patient, suspicious that the disease is

cancer, endeavours to put off the evil day, which she feels must arrive when she consults a medical authority, only to learn that she is doomed. The very fact of her acting in this manner, if she knew it, is sufficient not only to induce a further deterioration of health, but at the same time to favour the development of disease. There can be no doubt whatever that the mind, concentrating its attention with morbid tenacity upon a certain organ, must have a pernicious effect upon it, and simultaneously promote the vitality and virulence of the perverted cells constituting the disease.

I am convinced, therefore, that only when, and not until, the public are made aware of the fact that cancer in its initial stages is a curable disease, and, acknowledging this, will not hesitate to consult a competent authority the moment their suspicions are aroused, will they be able to realize that not only an enormous amount of physical suffering may be averted, but a much greater amount of mental distress—which latter we know is not confined to the patient—be avoided. It becomes incumbent upon the public, therefore, to acquaint themselves with those symptoms, which in the initial stage of this formidable, and certainly, if left to

itself, fatal, disease, may be readily recognized, so that no valuable time be wasted before obtaining advice, and adopting active measures to combat the morbid condition. It goes without saying this must promptly be eradicated, and the causes of its further development removed, before the disease has obtained such a hold upon the neighbouring parts as to render this next to impossible. And at this point I must make it perfectly clear to my readers that in the early stages of the disease its exact nature can without difficulty be recognized, and still be within range of curative measures. This I have proved over and over again, but, unfortunately, the incurability of cancer has become such an accepted dogma by the profession that it is difficult to convince its members, and through them the public, that a happy issue is attainable. Indeed, so much is this the case that I have been told by medical men, "If the patient recovers, the case could not have been cancer"; and this in spite of the fact that the disease may primarily have been diagnosed as such by several members of the profession who were quite competent to form a correct opinion. Is it to be wondered at, then, that while such dogmatic opinions exist little or no progress is

made in the direction of solving the important problem of the curability of cancer?

Up to this point I have used the word "cancer," under which term at the present moment are included quite a number of distinct diseases, each depending upon a specific source. Why we should employ this antiquated nomenclature in describing a number of diseases which differ in so many characteristics, but agree in this, that, if left alone, they each and all invariably prove fatal, is difficult to comprehend.

When we remember that until recent years typhoid fever and typhus were classed as one disease, and that now we are aware they are as distinct from one another as two diseases can possibly be, with the exception that they are both fevers; when we know it is due to recently attained knowledge that the death-rate from these diseases has become considerably reduced, is it not reasonable to anticipate similar satisfactory results were we enabled to arrive at a correct knowledge of the pathogenesis and pathology of cancer?

To take another instance in support of my contention, it is only within comparatively recent years, within the memory of many now living, that death from "inflammation of the bowels,"

as it was called, has been generally certified as such. Now we have learned that this class of disease comprehends a vast number of distinct affections of the abdominal cavity, which, when properly diagnosed, and treated as the individual merits of the case demand, comparatively seldom culminate in a fatal issue. With our present knowledge we are able to ascertain whether it is a case of peritonitis, appendicitis, cellular pelvicitis, a twisted pedicle of an ovarian tumour, or any other distinct as opposed to general form of inflammation, and thus direct our energies to the removal of the specific lesion, which would sooner or later involve the whole peritoneum, when, of course, interference would be next to hopeless.

Take yet another instance of the light which has been thrown upon medical science in the course of the past few years. In my younger days "dropsy," as it was termed, was a frequent cause of death. At this period, especially in country districts, dropsy was not classified as it is now. No material difference was thought to exist between ordinary ascites, which is general dropsy of the abdominal cavity, due frequently to some obstruction in the circulation of the liver, or want of power on the part of the heart;



an encysted dropsy, which is due in the majority of instances to a tubercular condition of the peritoneum or lining membrane of the abdomen; or ovarian dropsy, each of which can now be identified and treated according to its merits.

By this advance of knowledge, I need hardly attempt to point out, many thousands of lives have been saved which otherwise would have ended in premature death, and this is now a generally acknowledged fact. I only instance these examples to indicate how important it is to deal with each individual condition, classifying it so that it may be treated according to the special symptoms which it develops, instead of accepting dogmas as truisms, and thus placing an insuperable barrier to the advance of knowledge. As long as men will insist that a treatment which has ended happily for a patient suffering from cancer is futile, and that if the patient recovers, then it was not cancer, we can never expect to look forward with hope to any advancement in the treatment of this scourge. Let us not doubt, however, that this unreasonable prejudice will rapidly disappear, and with it a painful amount of suffering, which at present appears to have no remedy. I say *appears*, but

I maintain that it only *appears* to have no remedy to those who have not attempted to employ the remedies which I know to exist, and which I have had frequent opportunities of employing with excellent results.

## CHAPTER II

### VARIETIES OF CANCER

A COMPARISON of the article "Cancer" in the tenth edition of the "Encyclopædia Britannica," which is supposed to impart all that medical science has elucidated up to date regarding the natural history, pathology, and treatment of this disease—and that of the former edition, which was published between the years 1875 and 1889, indicates clearly that no definite conclusion has yet been arrived at on this important subject.<sup>1</sup> I should perhaps be more accurate if I put it as follows: that no explanation of the morbid processes at work and the means to avert them have hitherto been accepted by the profession as satisfactory. It remains to be seen if the following

<sup>1</sup> I may add that the article upon cancer in the eleventh edition is little more satisfactory.

remarks will have any effect in shedding a little light on the path to the goal we are all so anxious to reach. The opening paragraph of the article referred to is as follows: "Cancer has been the subject of much exact investigation and a still larger amount of theory and assumption. It is important to distinguish between them. The following points deserve notice: (1) Prevalence, (2) causation, (3) distribution, (4) treatment"; while almost the whole article is taken up with statistics. The various forms which the disease assumes are not even mentioned, the pathology is ignored, and the treatment barely glanced at. Can this be construed into anything but a confession that so far science has been baffled by this mysterious disease? It assuredly bears no other construction, and I maintain that so long as we continue our investigations in the manner in which they have hitherto been pursued, the mystery will continue.

We have hitherto, as I have already remarked, been in the habit of classifying a number of diseases as one, without even recognizing that the various forms of cancer are as distinct from one another as typhoid is from typhus, measles from scarlatina, or chicken-pox from small-pox. Yet these have all one or more symptoms in

common just as the various forms of cancer have. How different, however, is the treatment pursued in each, and how varied are the pathogenesis and pathology. Does anyone for a moment dare to aver that we could treat these diseases as successfully as we are now able to do, if our knowledge did not extend far beyond the simple fact that they are fevers? So, before we can possibly hope to accomplish anything towards the elucidation of the disease under discussion, we must get rid of the word "cancer" except as a generic term. We must be able to differentiate between the pathogenesis, the pathology, the predisposing causes, the premonitory and initial symptoms of the various characters it assumes. I insist upon this as a necessity before any correct conclusion can be arrived at. No one will, I venture to affirm, deny the fact that, with the exception of scirrhus and encephaloid, which I am inclined to look upon as varieties of one form of cancer, each type of the disease differs from its fellow in individuality, source, structural composition, progressive growth, and consequent invasion of the surrounding tissues, as wheat differs from barley and barley from oats.

It will not be wondered at, after what I have stated, that hitherto so little headway has been

made both in the pathology and treatment of the various forms of the disease. A simple enumeration and description of these varieties will accentuate my previous remarks.

First of all, let us take that form of cancer which attacks the mucous membranes and skin, and which may perhaps be looked upon as most easy of diagnosis, and probably is the most amenable to treatment. Here we have a growth composed *entirely* of the elements of the tissue primarily attacked, and which invariably has the appearance of a superficial lesion in the early stage of its existence. This form of cancer is most frequently met with in the womb, on the mucous membranes, on the lips, and on the skin in various parts of the body, and appears to be invariably the result of some prolonged local irritation. There must, however, have been some other cause at work, which we designate the "predisposing cause," whereas the local irritation is the "exciting cause." I base this argument upon the fact that although the same amount of irritation may exist in different individuals, yet it is not invariably—nay, rather, it is only in a small *minority* of cases—that disease supervenes. Now, if there were not some other influence at work besides that produced

by the local irritation, the injurious effect of this would pass off without further mischief.

As a second example, let us glance at that form of cancer which most frequently takes its seat in the female breast. This, so far from partaking of the nature of the organ in which it finds its habitat, on the contrary appears to be a distinct importation, and therefore differs altogether in its natural history from epithelioma, to which we have just alluded. This form, named scirrhus, is of a hard inelastic nature, tending rapidly to invade the surrounding structure. Melanotic cancer, on the other hand, is somewhat similar in its behaviour to epithelioma. It would appear to be a malignant disease of the pigment cells, and frequently takes origin in that pigmentary deposit which we term a mole. Wherever it ramifies it is always characterized by a multiplication of pigment cells. Another form of cancer, which, from its resemblance to brain substance, is termed encephaloid, probably is the most malignant with which we are acquainted. Fortunately, the two latter forms of the disease which I have mentioned are not frequently met with, so that the principal points of interest which present themselves for our



more immediate consideration are the causes and treatment of the two first named—viz., epithelioma, which, as I have stated, most commonly manifests itself in the womb, the lips, tongue, and in various localities upon the surface of the skin; and scirrhus or hard cancer, which as a rule invades the breast.

## CHAPTER III

### THEORIES OF THE PATHOLOGY OF CANCER

THAT the nature, or, as it is technically termed, the pathology of cancer is little understood is made apparent by the fact that hardly two authorities agree on the subject, and rarely a day passes but some new theory is introduced, only, however, to be laid aside as worthless. One of the most recent hypotheses advanced on this subject contains, in my opinion, not the slightest argument in its favour, being pure conjecture. Moreover, it is theories of this nature which tend to lead us astray from the truth, and militate against the correct origin being unearthed. As the article referring to this is of considerable hygienic value, I give a quotation

from it, which may prove instructive in some way, but certainly not in the manner which the writer evidently intended.

“Behla (*‘Deutsche Medizinal Zeitung,’* No. 45, 1900) notes that the outlook has not changed since Bardleben said twenty-five years ago that prophylaxis against cancer could not be found. However, Behla thinks the following points worthy of attention: From various researches about the supposed cause of cancer, suspicion has been thrown upon the water in stagnant pools, ponds, and ditches which are surrounded by wood or bushes on their banks, and this may with great probability be regarded as the bearer of the cancer germ. In such cases where endemic cancer is present it is desirable that such water should not be used for drinking unless it be boiled, nor should it be used unless boiled for household purposes, washing tables, eating and drinking vessels, or to water the garden and field beds. Cancer may also be derived from vegetables, so that salads and raw vegetables must not be washed with such water. To the use of salad, raw vegetables, fruit, and berries, a greater hygienic attention must be paid. The baskets, sacks, etc., in which fruit is stored are often kept in damp, unclean rooms,

cellars, outhouses, etc., where mould is prevalent. There is still a blot on the hygiene of foods, for whilst with water, meat, and milk, the best sanitary measures prevail, the gate is wide open to infection from raw vegetables and fruit.

“Behla thinks heredity undoubtedly plays an important rôle in the etiology of carcinoma. He also blames marriage between near relations. Infection may be conveyed by the secretions, discharges, blood, etc., from cancer by means of fingers, instruments, pipes, drinking vessels, etc.

“The author bases his conviction on frequent outbreaks of cancer which cannot be accidental, and he considers that the cancer germ resides in the house or in its near neighbourhood, and that it will be eventually shown to be a plant fungus, and that then cancer will become a preventable disease.”

In the above, it will be perceived, are expressed the views of a writer who professes to a certain knowledge of pathology, and who doubtless, for aught I know to the contrary, is a scientist of standing in Germany. Yet, notwithstanding these qualifications, he persists in talking of “*the cancer germ*,” an entity which no one has ever yet seen, and whose

existence has never been demonstrated. Moreover, as I have previously pointed out, the term "cancer" is applied to a whole collection of diseases, each of which is distinct from the other in its natural history, method of attack, seat of selection, degree of malignancy, and many other distinctive features. In short, we have, so far, committed the grave error of classifying a variety of diseases as one. How, then, in these circumstances, is it possible, with any attempt at accuracy, to speak of "*the germ of cancer*"?

That cancer will become—nay, is already—a preventable and, in its early stages, a curable disease, there is not the slightest ground for doubt. (So far, therefore, I agree with Behla's remarks.) This consummation, however, will not be obtainable if we look for the causation and origin of the disease in such problematical sources as the ubiquitous "germ." It is from a hygienic point of view only, therefore, that the contents of his paper can be accepted as possessing any value, and not from any light they shed upon the pathogenesis of cancer.

Still another and more recent theory has been advanced by Professor Schutter of Berlin. This surgeon has announced to the scientific world

that he has discovered "*the cancer bacillus*." "*The cancer bacillus*," you will again observe. He describes this as "a yellowish capsule containing small living organisms which are the originators of the disease." It is quite evident this investigator has been concentrating his attention upon epithelial cancer, where he would doubtless observe such bodies; but these, I believe, so far from being the cause, are, on the contrary, the products of the disease—they are, in short, the metamorphosed cells of the epithelial tissue which are filled with nuclei, each having the power of reproducing a cell, similar to the parent cell, at an alarming rate of rapidity, in the process preying upon the subjacent structure, and so increasing the area of invasion. Schutter states that these so-called "bacilli" are very sensitive to cold, and will stand no heat over 50° C. It is some years ago since I pointed out this fact with regard to these cells, and one plan of treatment I recommended was to keep a current of heated air—not sufficient, however, to injure the normal tissue—playing upon the seat of the disease, which, in conjunction with constitutional treatment, will succeed in effecting a cure if the disease is attacked in the earlier stages of its existence.

In connection with the above, Professor Weichelbaum, the well-known bacteriologist of Vienna, has stated that he is unable to accept Professor Schutter's theory until its truth has been distinctly proved by experiments; and he adds, very wisely: "Especially after so many mistakes have been committed with regard to the treatment of cancer."

You will observe that even this savant classes all diseases of this nature as one. To me it is incomprehensible how men who have a just claim to be considered leaders in the scientific world will persist in perpetrating such a flagrant and palpable error, as it must inevitably prove an insurmountable barrier to the solution of an important problem.

In fact, the evidence we possess tends in every direction to prove that epithelial cancer is entirely the outcome of prolonged irritation of the part, while the blood is in a disordered condition. This irritation has incited the normal cells to take on an abnormal development, and in the process, has transformed them from innocent and benign bodies into a condition of cannibalism and malignancy. In considering this metamorphosis we must always bear in mind that for a long period before the change takes



place there has been an unhealthy condition of the part affected, which would have been easily amenable to treatment, and complete recovery might, with every confidence, have been anticipated. Once the border-line of malignancy, however, has been crossed, such a serious phase of the disease has been entered upon, that, though we may still look confidently forward to recovery, yet this result can only be attained after encountering difficulties which will increase *pro rata* with the length of time the disease has been allowed to proceed unchecked.

We must always bear in mind that in the evolution of epithelial cancer, as well as in the other varieties, cells which at one time formed a part of the healthy organism have become endowed with poisonous and destructive powers. In consequence of this alteration in their constitution, they have become endowed with a proclivity to prey upon the neighbouring tissues, and it is when this metamorphosis from a healthy to an unhealthy cell has become established that we apply to it the term "cancer."

In no instance does epithelial cancer make its appearance without giving ample warning of its approach, and it only requires a more extended knowledge of the premonitory symptoms, which



invariably precede its manifestation, to enable us to stamp it out completely.

What is required is a classification of the various forms of cancer, with reference to its proclivity to attack certain structures, its microscopical character, mode of origin, method of development, the constitutional conditions which favour its initial growth—as when once it establishes a footing, no matter what form it represents, it will almost invariably tend to advance if left to itself—and treatment.

It is on these lines that I have been at work for some years past, and, I am thankful to say, with gratifying results to my patients and myself. Other workers in this interesting field of research have also obtained equally pleasing results; but all are agreed that if the disease is ever to be looked upon as curable, and thus robbed of the terror it naturally gives rise to, and the death-rate, with its accompaniment of intense suffering, diminished, there must be inculcated a much greater amount of knowledge amongst the public, so that they may be enabled to protect themselves against the ignorance and gross carelessness which prevail at the present day.

## CHAPTER IV

## IMPORTANCE OF EARLY DIAGNOSIS

WE must bear in mind that there are many instances on record where spontaneous cure of cancer has taken place. Now, these happy results could only be due to the fact of the affected tissue having so far regained its original resisting power as to enable it to checkmate the disease, after which the forces which stimulate absorption would naturally come into action, and thus effect its entire removal.

Now is it not self-evident from this fact that cancer is a curable disease, and that what is requisite is that we should adopt measures which will supplement Nature's efforts?

Our duty, then, is, in the first place, to endeavour to obtain as early a recognition of the disease as possible, and never to ignore any departure from health which may manifest itself in any organ which, by experience, we have learned is prone to cancerous infiltration. If there should be the least doubt entertained, the medical attendant would be culpable were

## 22 IMPORTANCE OF EARLY DIAGNOSIS

he to hesitate to call in other advice, and he may rest assured his patient will thank him for the solicitude he has manifested, if he thus acts up to his duty.

It is impossible to impress too earnestly, not only upon the medical practitioner, but upon the public also, the importance of an early diagnosis. There is practised, unfortunately, by patients who dread the idea of cancer, too much secrecy and reticence, and thus frequently valuable time is wasted and opportunity for successful treatment lost. Again, I have known many instances, where the initial symptoms—when cure would have been almost certain if promptitude had been exercised—have been pooh-poohed by medical men, although, to say the least of it, their suspicions should have been aroused and means taken to set every doubt at rest; and others where the patients have been to blame in not submitting to an examination, when the disease might have been arrested. In these instances death occurred, attended by great suffering. It makes one sad to think that if ordinary prudence had not been neglected this might have been averted.

If medical men would only take alarm when a suspicious-looking nodule makes its appear-

ance, and not treat it as if it were a mere nothing, it is impossible to estimate how much avoidable suffering and anxiety would be prevented, not to mention the valuable lives that might possibly be rescued.

In every instance where there are the most remote grounds even for suspicion, the opinion of a more experienced man should be called in without hesitation. If it should turn out that there is no danger to be apprehended, so much the better ; but if the contrary happened to be the case, which the near future would soon demonstrate, now is the time for action ; and surely no sensible person could ever think his position would be compromised by the wise precautions he had taken in the interests of his patient.

I can never forget the history of two poor ladies, whose sad deaths have left an indelible impression on my mind, as I know it was not their fault that they were permitted to drift into a condition which precluded all hope of recovery. One was a married lady, who was suffering from cancer of the womb, and who, without delay, drew the attention of the medical attendant to symptoms which clearly indicated cause for apprehension, but which he, without a sufficiently searching examination, set aside, the

while stating his opinion, and thereby unveiling his ignorance, that these were only due to the change of life.

It was more than a year afterwards that a consultant was called in, who then was obliged to confess that the case was beyond all hope of recovery.

The other was that of an unmarried lady, who complained of a small lump, not larger than a hazel-nut, which had appeared in her breast during the time she was paying a visit in the country. The local medical man was sent for, and, after a most perfunctory examination, declared that it was nothing of any consequence. With this assurance the poor patient gave herself no more concern until her whole breast became involved, and although operation was resorted to, the disease had advanced to such an extent that, like all such operations, it proved useless, and she died within a few months in great agony.

Let me quote one more instance: In July 1899 H. R. Coston, M.D., Fayetteville, Tennessee, was called in consultation to see a lady fifty-two years of age, the mother of two children, the youngest of whom was twenty-eight. The patient passed the climacteric at forty-seven, five years

previously, without trouble. She (Mrs. L——) had always been delicate, but fairly well; never strong, but never confined to bed, though she seldom left her room. About 1 January 1899, she began to notice at intervals a discharge of blood or bloody water. She consulted her family physician, who told her that the discharge was possibly only a slight return of the menses, and not to bother about it. *He failed to make a vaginal examination, and hence lost the golden opportunity to save the patient.* When Dr. Coston was called to see her on 12 July, six months after the first symptoms, he found the discharge was continuous, some days very severe, while other days it would be only a stain. Dr. Coston further adds: "The patient will soon die, whereas there is little doubt that she might have been saved had the correct nature of the disease been diagnosed when she first drew attention to the early symptoms."

I quote this case, not on account of its rarity, but because it is reported by one who evidently holds similar views to my own on this important question. I have myself met with many similar instances of neglect and gross carelessness, and I can only hope that a recital of such instances may prove an incentive not only to medical



men to exercise more care, but to the public to endeavour to give expression to their symptoms before these have developed to an alarming extent.

The difficulty found in convincing the public of the absolute necessity of not neglecting even for a day to obtain competent advice in every instance where suspicious symptoms manifest themselves is at present indeed the chief obstacle which bars the way to stamping out this scourge completely. The onset of cancer is never surreptitious, but invariably gives warning of its approach by symptoms which are unmistakable to an observer with ordinary intelligence. When it is remembered, moreover, that these symptoms, while manifesting themselves in the womb, invariably produce constitutional symptoms which are easily recognized as proceeding from an affection of this organ, it is difficult to understand why a woman will not, without hesitation, consent to place herself under treatment, whereby her health may not only be restored, but a grave danger averted.

It is a recognized fact that there is no more important organ in a woman's body than the womb, and none which is more susceptible to disease, yet I have no hesitation in averring



there is not a portion of her body which is so much neglected, even when symptoms unmistakably indicate that it is in an unhealthy condition. It is not to be wondered at, then, that cancer of the womb is so prevalent when we bear in mind that so frequently little or no attention is directed to significant symptoms when these manifest themselves; or, rather, that the subject is so late in receiving attention that the disease may have been permitted to pass beyond the stage when a satisfactory result of treatment could reasonably be looked for.

While considering this important division of the subject I will confine myself to my own experience, the result of which is, first, that I have more frequently met with epithelial than all the other forms of cancer put together; secondly, that the most frequent seat of the disease, according to my observations, has been in the womb. That it has a much wider range of invasion and is by no means confined to this organ goes without saying, for we know it is liable to occur wherever an epithelial membrane exists. Now, we have epithelium covering the whole surface of the body, the cuticular layer of the skin being entirely composed of epithelial cells; likewise the mucous membranes extending from the eye,

through the nasal passages, and throughout the whole area of the breathing apparatus; also from the mouth to the stomach, continuing through the intestinal canal; also throughout the genital and urinary passages. We may therefore find epithelioma manifesting itself at any part of the surface of the body or lining membrane of the various internal structures.

In every instance, however, its appearance is immediately due to some preliminary and protracted irritation of the parts which is the exciting cause. This will be well illustrated by a study of cancer of the lip, but before attempting this I think it would be preferable to confine the attention of my readers to the subject of cancer of the womb for a little longer, and my object in doing so is to point out the manner in which the disease generally intimates its approach. In every instance abundant warning is given by unmistakable symptoms, with which the public ought to be thoroughly acquainted; such knowledge, I feel confident, would prove most helpful in stamping out the disease—as far as this organ, at all events, is concerned.

## CHAPTER V

## CANCER OF THE WOMB

FROM extensive observations of my own, which have been amply confirmed by the experience of others, I think I may put it down as beyond dispute that cancer of the womb is far and away more common in women who have borne children than in the unmarried and sterile. This can be accounted for by the fact that frequently serious injury is inflicted during childbirth; and I know of no circumstance which predisposes to the disease under discussion more than laceration of the neck of the womb, which, unfortunately, not infrequently occurs without the medical attendant even being aware of the fact. If such should be the case, and the lesion be left to itself, there can be no doubt as to the consequence if the sanitary condition of the colon has been overlooked. Complete involution thereby will be impossible, and the womb will therefore be left in a hypertrophied, unhealthy, and enfeebled condition, and such a

state of matters cannot possibly exist without disease eventually asserting itself.

It must not be inferred from these remarks that I look upon laceration of the neck of the womb as a certain precursor of cancer, or even as an unfailing source of disease, because it depends very much upon the position of the laceration what effects will ultimately ensue. But there is no doubt that so long as laceration of the neck of the womb continues, the organ will be prone to disease, so that the earlier the lesion is removed the better the patient's health will be. Nor must it be inferred that laceration is the only source of disease in the womb. Many other conditions arise, which so enfeeble the organ as to render it liable to become the seat of disease. These may possibly and not improbably be simple in the early stages, but later on may culminate in malignant mischief. Such results being within the range of possibility, does it not behove every woman to make herself acquainted with these premonitory symptoms? They may be, perhaps, trivial in the first instance, yet because they do not suddenly become aggravated, but rather take on a gradual process of development in their insidious progress towards incurable disease, are they to be

ignored as they are liable to be, and tolerated with an amount of indifference which frequently proves fatal?

It is with a view of enabling my readers to avoid this danger that I now point out the early symptoms, which, though causing little inconvenience at first, gradually develop intensity until their effect is such that not only is the physical strength reduced, but the nervous system completely undermined.

When, therefore, a woman who, up to a certain date, has been robust both mentally and bodily, begins to feel creeping over her a feeling of general weakness, possibly accompanied by pain and a consciousness of oppression at the lower part of the body, together with depression of spirits and irritability of temper, she will generally find that these symptoms are accompanied by a discharge which is both more excessive and of a different character from what it has hitherto been. In the first instance, this may consist entirely of mucus which is almost limpid in character; but it gradually increases in volume, and at the same time its appearance is altered, assuming a more milky character, which then goes under the name of leucorrhœa. In process of time—it may be months or even years—a gradual

change comes over the character of this secretion; and from being white it assumes by degrees a yellowish or creamy appearance. This may be described as the first serious degeneration in the quality of the discharge, for, instead of being as it hitherto has been a secretion—though an excessive secretion—of the epithelial layer of the mucous membrane, it has become purulent in character, which imparts to it distinctive features of disease. When this stage has been reached, the probability is that the effect upon the constitution will have become very much more pronounced, the depression of the nervous system more accentuated, and the temper more irritable, while there will be a feeling of weight and oppression at the lower part of the abdomen, with pain over the loins and enfeeblement of the lower limbs. Accompanying these symptoms will be a desire to make water very frequently, and probably its volume will occasionally be much increased, at intervals presenting a limpid appearance. If the disease is still permitted to advance, the creamy discharge before mentioned will give place to a yellow and acrid secretion, indicating a still further advance in the diseased condition. This, being of an acrid character, will tend to cause



excoriation of the mucous membrane of the neck of the womb, so that upon the least touch it will be liable to bleed, and in a short time the discharge will become highly offensive in odour. To put the most favourable construction upon the symptoms, we now have presented the first suggestion that the disease has crossed the border line between a simple and malignant affection, a condition of affairs which should never have been permitted to become established.

If one traces the gradual and almost imperceptible evolution of disease in such circumstances, it is impossible to reconcile the ultimate result with the advent of a "germ" or "bacillus," or whatever term one may apply to it. No other explanation can be given but that it is a gradual metamorphosis of a normal cell to one of malignancy, and this I hope to be able to prove to the satisfaction of my readers further on.

## CHAPTER VI

### GENESIS OF THE CANCER CELL

IT may be considered a bold and sweeping assertion when I state that I am convinced that



cancer—or, rather, the elements of cancer—are present in every individual, whether it manifests itself as a disease or not. That is to say, the cancer entity is, as I have remarked, in its original state, a normal cell, which has from a combination of circumstances become altered in character, not towards degeneracy, as I construe the term, but to increased activity. It thus loses its benign attributes, and, ceasing to perform its functions in harmony with its surroundings, becomes aggressive and cannibal in its proclivities, devouring its neighbours, procreating its species at an alarming rate of rapidity, prostrating by its contact the neighbouring tissues, and then preying upon them when their power of resistance is thereby reduced. Its physiological action is displaced by a pathological activity alarming in its results. Speedily the disease process is conveyed by means of the lymphatics and blood-vessels to distant organs, each of which becomes a new centre, from which the mischief radiates.

I now come to consider certain conditions which, by their combined influences, conspire in an indirect yet tangible manner to supplant a temporarily weakened but otherwise healthy tissue by a structure still bearing a strong resemblance to its parent, yet endowed with a

malignity which hitherto it has been difficult to avert or destroy.

The causes of this pathological metamorphosis are apparently trivial in themselves, and thus liable to be overlooked, yet if they are present in sufficient force they necessarily exert a pernicious influence upon the general health, and more especially upon an organ of which the vital vigour has been previously reduced. If this organ has also been the seat of prolonged irritation in addition to this reduction of vital energy, a disease process is most liable to be set ablaze, and one that will not be easily extinguished.

Let us bear in mind that whatever acts prejudicially on the general health is a factor in the production of cancer, and it is in this way bad ventilation, constipation, excess in eating or drinking, worry, sedentary habits, and other unhygienic conditions, act so perniciously, and react upon an organ which in other circumstances might be able by its inherent vitality to resist successfully the onset of malignant disease. Bearing this in mind, we must not overlook the fact that intrinsically a morbid cell possesses potentiality very much inferior to that of its healthy and physiologically active neighbour, and it is only when the latter is prostrated

by one cause or another that the former is enabled to exert its pernicious potency, which almost invariably becomes aggressive. In other words, every circumstance which tends to impoverish or militate against the general health predisposes to cancer, and if a particular organ is simultaneously the seat of a lesion, or has had its physiological activity in abeyance *pari passu*, this organ will become further weakened by injury, and the superadded enfeeblement thus conveyed to it will render it prone to that kind of cell metamorphosis which results in malignant disease.

Permit me to revert for a moment to the statement I have made, that I believe the elements of cancer are present in every individual. To illustrate this, let me recall your attention to the palpable fact that epithelioma always retains its epithelial character. In scirrhus it is different, for in this case, it may be, we have a cell or cells, which have migrated from a distant organ—most probably the ovary—and have become located in the mamma, there to assume a new and morbid development if the opportunity should arise. Moreover, we have a palpable example of epithelioma existing in a harmless, or, at least, a passive, state in a wart. If this is

not interfered with, the probability is, it will remain as simply a disagreeable disfigurement; but if, on the other hand, it is subjected to rough usage, we know by experience that very serious mischief may result, and instead of a passive nodule, an active epithelioma may result. Take again melanotic cancer, which is typified by a mole. If this is subjected to prolonged irritation, does it not become liable to develop malignancy? while, if this ensues, the disease will be characterized throughout its whole course by altered pigment cells, just as epithelioma is made up of metamorphosed epithelial cells.

Now, in epithelioma of the cervix uteri we have had for a long period prior to its manifestation as such an enfeebled condition, not only of the uterus, but of the general health of the victim. The latter has been contingent upon, if not in a great measure due to, a prolonged existence of endometritis, with its train of concomitant symptoms of neurasthenia and consequent prostration of functional activity of all the organs of the body, one acting perniciously upon another and possibly distant organ, until the whole gear of the economy is thrown out of healthy working order. Everyone, I suppose, will admit that the integrity of the epithelium depends largely

upon the unimpaired activity of the thyroid body; and not only is the mucous membrane dependent upon this organ to a large extent for the continuance of its health, but, according to Charcot, Bonilly Tuffier, Guinan, and others, there is as well a distinct physiological relationship between the thyroid and uterus, which fact was well known to the ancients.

We also must conclude that if a debilitated condition of the nervous apparatus has resulted, as is invariably the case when a chronic affection of the uterus has existed for a lengthened period, the normal functions of this gland must have been interfered with simultaneously with those of other organs. If, super-added to this, the original cause of the uterine mischief, usually a laceration or erosion, continues, the tendency of the epithelial cells in the immediate neighbourhood of the lesion will be to pass from their healthy condition to that of malignity.

As will be gathered from my remarks dealing with cancer of the mouth and throat, I look upon the rheumatic diathesis as a most important predisposing cause of epithelioma, and most probably of every form of cancer also. I therefore hold it is advisable to combine an anti-rheumatic course of treatment with that specially

devoted to the cancerous affection. My conviction is that the condition of the blood which we designate "uricacidæmia" is a factor without which malignant metamorphosis of cells cannot, or at least does not, take place. I therefore invariably supplement my special treatment with a course of aspirin or other salicylates, which seem to be antagonistic to the existence of *saccharomyces hominis*, these, I am convinced, being the ferments which are concerned in the production of uric acid when the blood is in a vitiated condition. This subject, however, will be dealt with more fully later on.

## CHAPTER VII

### CANCER OF THE LIP

I WOULD now request attention to cancer of the lip, to which we must apply its proper name of epithelioma or epithelial cancer (it being identical in its nature with that which affects the womb), in which we have a most important manifestation of the disease. Now, as we know, cancer of the lip is of very frequent occurrence, perhaps next in frequency to that of the womb.



It is, however, much more commonly met with in men than in women. A remarkable circumstance is that it rarely affects the upper lip, almost invariably taking its seat in the lower. It occasionally takes origin upon the mucous surface, but more frequently upon or near the line of junction of the skin and mucous membrane, and generally at one side of the middle line—that is, between the middle of the lip and the angle of the mouth. In very rare cases does it take origin at the angle, although in the progress of the disease the angle and upper lip may occasionally become involved.

König states that the proportion between men and women affected by this disease is twenty to one. It is more common in men whose occupation compels them to encounter the inclemency of the weather—for instance, fishermen, coachmen, and others who are exposed in a like manner.

It has been often suggested that smoking has a great influence in producing this disease, some going the length of stating that tobacco is really the exciting cause, but this is not quite correct. Yet smoking is an indirect cause of the disease, and probably this is due to a short-stemmed pipe being used. This grows hot when the



lighted pipe remains long between the lips; it then becomes dry, and tends to adhere to the skin and mucous membrane. When it is removed a portion of the epithelial covering is liable to be abraided, and, as most men hold their pipe in the same place, the epithelium becomes chronically irritated, is not permitted to heal, and finally the seat of irritation becomes cancerous. It is a remarkable fact that cigar smokers are not nearly so liable to cancer as those who use a short-stemmed pipe. Moreover, many workmen smoke during the time they are at work, and hold the pipe between the lips for a considerable length of time without removing it, so that it adheres to the lips, as I have pointed out. Thus the frequency of the disease, amongst workmen especially, may be explained.

An American writer, Dr. John Chalmers Da Costa, from whose able article on the subject I have taken the liberty of drawing, states: "It has often been asserted that tobacco itself is really a cause, the assertion being largely founded upon the fact that cancer of the lip is rare among females in countries in which it is not customary for women to smoke. It is stated further that cancer of the lip is no more common

among females in countries in which women do smoke. It has been alleged that the disease was common even before the discovery of America; in other words, it was common in Europe, before Europeans had begun to smoke." This may be true, but does not appear to agree with the experience of those most competent to form an opinion at the present day. It is asserted that cancer of the lip is more frequently met with among the female peasants of Ireland than among the same class in England, and the reason given is that the Irish peasant women often smoke. Warran saw four cases of women, and three of these patients were smokers. It is possible that tobacco, as an irritant to the mucous membrane, may have some influence in producing the disease, but the intensity of the influence depends largely upon the way in which the tobacco is used. Others have assigned careless shaving as a cause for the frequency of this affection in males, but we should note that cancer of the lip is frequently seen in those with beards.

In not a few instances cancer takes origin from a wart which has been unduly irritated; even a pimple may give rise to the disease, and not infrequently it may take origin in a scar or

any neglected spot which has been irritated, such as an ulcer or fissure. This latter fact should make one very careful not to permit a fissure upon the lip to continue for any length of time. Any ulcer or fissure having an indurated edge should always excite anxiety, and if not due to some specific disease should, without hesitation, be excised or treated locally with some stimulating or even caustic application.

Age has a considerable influence in determining the development of this form of the disease. Cancer of the lip is uncommon before the age of forty, although it may be met with some years earlier. The commonest age is between fifty and sixty, and, strange to say, the younger the person attacked by the disease, the more malignant it proves—very much more so than in older persons. Broca states that cancer of the lip in an individual over forty is, as a rule, more malignant than cancer of the skin, and less malignant than cancer of the tongue, although the intrinsic nature of the disease is identical in each instance.

Whenever the disease attacks the skin of the lip it is generally less malignant than if it arises from the mucous membrane, the fact being that

the further into the mouth the growth begins, the more serious it is. It may take its origin, in the first instance, from a fissure having hard edges which will not heal, as an indolent ulcer having hard edges is kept from healing. The same may be said of a hard papule in the mucous membrane which does not break down into an ulcer for a considerable time; or a raw-looking surface, which alternately becomes moist and crusts over, and is covered with a kind of granular projections. The first three forms spread deeply under the epithelial lining of the mucous membrane, and dip into the muscle of the lip at a comparatively early stage, whilst the last mentioned form tends to remain superficial for a considerable period before the muscle is attacked. The first three forms are more serious in their nature than the last, although the papule referred to may remain, just as a wart may, and as other forms of cancer evidently do, in a latent or inactive condition for a considerable period. The rule is that the earlier the disease penetrates the muscle of the lip, the more malignant is the growth, as whenever it reaches this form of tissue it becomes disseminated with much greater rapidity than it tended to do prior to its dispersal by muscular contraction and relaxa-

tion. It is this fact which makes cancer of the tongue—although identical in its natural history—more malignant than cancer of the lip, and which renders cancer of a mucous membrane more malignant than cancer of the skin. Whatever form cancer in its primary stage assumes, even if the surface is not broken at the commencement of the disease, it will sooner or later ulcerate, when the characteristic ulcer of cancer will manifest itself. Sometimes in the early stages of the disease this ulcer may be concealed by a scab or crust, underneath which the raw surface is hidden. Patients should be warned against picking at this crust, and thus constantly irritating the area of the disease. In every instance where an epithelial ulcer exists it is characterized by being raised above the surrounding surface, having hard, everted, and uneven edges, the base of the ulcer being hard and irregular, with a tendency to slough. The discharge which comes from this ulcer is a thin, reddish, and irritating serous fluid, which acts prejudicially upon the surrounding tissue, enfeebling it and rendering it a more easy prey to the morbid process.

Caustic should never be carelessly applied to epithelial ulcers, as it is liable to cause them to

spread with much greater rapidity than they would otherwise tend to do. As a rule, cancer of the lip spreads in a lateral direction, and also downwards through the skin, till it reaches the muscle. The line preceding the advance of the disease is always marked by induration of the tissues, due to the local irritation; and this induration is invariably composed of weakened tissue, which therefore becomes an easy prey to the voracity of the disease. This may advance, and certainly will if left to do so, until the entire lip is destroyed, and the floor of the mouth, the lower jaw, and neck become involved. Long before this stage has been reached, however, the lymph glands become affected and infiltrated by the disease, and by this channel the constitution at large becomes affected, when, of course, hope of recovery is seriously jeopardized.

In attempting to make a diagnosis of cancer of the lip, we frequently meet with cases which, although resembling this disease, are yet quite simple in their nature, and readily respond to treatment if their distinctive characteristics be correctly diagnosed. We not infrequently meet with the following: simple ulcer, tubercular ulcer, and syphilitic affections, which we know are quite distinct from cancer. We must always bear



in mind, however, that any of these ulcers, whether they be simple, tubercular, or syphilitic in the first instance, are in every case more or less liable to take on a malignant degeneration. This untoward result will only supervene upon prolonged irritation or neglect.

## CHAPTER VIII

### CANCER OF THE TONGUE AND OF THE THROAT

IN speaking of cancer of the lip, incidental mention has been made of the virulence of the disease when it attacks the tongue. This, as I have pointed out, is due to the fact of the disease being more rapidly communicated to the muscular structure. It is important, therefore, that any suspicious ulcer or induration on the surface of the tongue be attended to without loss of time. In cancer of this organ, which is an epithelioma, we observe a series of premonitory symptoms, which will never arise if the functions of the alimentary canal are in a healthy condition.

It is a well-known fact that the tongue reflects very accurately the condition of the stomach,



liver, and bowels, and the odour of the breath is an important indication also of the state of the kidneys. Now, gout and rheumatism are entirely the outcome of persistent inattention to the digestive and excretory organs, in consequence of which the blood gradually becomes overcharged with toxic material. This contamination of the blood interferes with nutrition, and, while giving rise to rheumatism and gout by being deposited as urates in the joints, produces simultaneously a marked effect upon the mucous membranes; indeed, it is not difficult to diagnose a rheumatic diathesis by the appearance of the tongue, while tonsillitis, frequently giving rise to suppurating sore throat, is invariably of rheumatic origin. Moreover, it is this rheumatic condition of the mucous membrane, due to uricacidaemia, which renders many people so susceptible to nasal, pharyngeal, and bronchial catarrh.

To return to the condition of the tongue in rheumatic subjects: we shall frequently note it is unduly red, glazed, and flabby; its vascularity is excessive, and it is increased in bulk. In other words, its healthy character has departed. Its mucous membrane lies loosely upon the muscular substratum, and presents the appear-

ance of being hypertrophied. In this condition the epithelial layer is prone to resent irritation and undergo pathological changes if thus provoked. As the tongue in these circumstances bulks more largely than in its normal condition, and its recuperative power is reduced *pro rata*, it is more easily injured by the ragged edges of decayed teeth, by smoking, by eructations of acid, and other causes, while surfaces thus broken are liable to ulcerate. If the irritation is not immediately removed, these will not heal, and gradually the enfeebled cells will undergo malignant metamorphosis. We cannot but conclude, then, that persons with a rheumatic tendency are more liable to cancer of the mucous membranes than those more fortunately situated.

In the case of cancer of the tongue, the proximity of the muscular substructure to the mucous membrane tends to make malignant disease of this organ very much more formidable than it otherwise would prove to be. The reason for this is obvious—because of the facility with which the disease is enabled to obtain a hold upon the muscle; for when this has been accomplished, the increased rapidity of its growth is prodigious. For this reason it becomes specially desirable to recognize and arrest the disease at

its initial stage; but much more important is the removal of every factor which tends to provoke its initial development.

We are acquainted with its pathogenesis and predisposing causes; then why not act upon this knowledge, for surely prevention is better than cure? But it is only by educating the public on these important points that we can ever hope to wage war successfully against cancerous disease.

Epithelioma is of comparatively slow growth while it is confined to the integument, but, on the other hand, as I have stated, when it has penetrated sufficiently to involve the muscular tissues, its rate of progress is increased to an alarming extent. This fact should never be lost sight of or ignored, but should act as a warning to everyone who may be the subject of a sore, either in the skin or mucous membrane, which refuses to heal. For rest assured this is invariably a suspicious symptom. Moreover, remove every source of continuous irritation, such as angularities of the teeth, acid dyspepsia, smoking a hot pipe, or anything which tends to provoke an irritable condition of the epithelial layer, either of the skin or mucous membrane.

It is for the above reasons I hold the public should not be left in ignorance on matters

which, to everyone, are of such vital importance, and where a little knowledge, instead of being a danger, as has been erroneously accepted, would be the means of arresting the disease when it was at a curable stage.

Cancer of the throat, like that of the tongue, is invariably preceded by an unhealthy condition of the mucous membrane. This may either be due to a rheumatic state of the blood or to a syphilitic taint. In either case, the ulceration in the first instance possesses no malignant characteristics, and if recognized while in its initial stage is amenable to local and constitutional treatment, which is well understood. The difficulty, however, is to diagnose the disease while it is in this condition, and it is only by the expert use of the laryngoscope that this can be satisfactorily accomplished, and only by the employment of this instrument can local treatment be accurately applied. If the disease, however, has unfortunately proceeded so far as to assume a malignant character, no effort should be spared to arrest its progress prior to the neighbouring glands becoming impregnated.

## CHAPTER IX

## PREDISPOSING CAUSES OF EPITHELIAL CANCER

THE tendency of cancer, unfortunately, is not to set up inflammatory action in its insidious progress; and this is due, I believe, to the fact that the disease does not partake of the nature of a foreign body altogether, but, as I have remarked, is composed of metamorphosed normal cells, which do not seem to act so violently as to set up inflammation. Hence no increased vascularity of the tissues in its immediate neighbourhood takes place, and phagocytosis remains in abeyance; or possibly the condition of the blood which is favourable to the development of cancer produces a prejudicial effect upon the white corpuscles, which exert their well-known powerful influence in assisting the *vis medicatrix naturae*. One thing appears certain, and that is the blood, previous to the manifestation of cancer, will, as a *sine qua non*, have so far departed from its healthy standard as to interfere sadly with the nutrition of the parts affected. Its integrity must therefore have been materially compromised, and its potentiality seriously

crippled. Hence the vitality of the several organs, whose potentiality is essential to the recuperative power of the various tissues, is, if not destroyed, at least handicapped to such an extent as to render it practically powerless.

We thus observe that cancer is essentially a disease supervening upon a persistent neglect of hygienic laws. We also are compelled to admit, that tampering with these laws, in process of time, results in a contamination of the blood, which prejudicially affects its component parts, thus reducing its vitalizing powers. In consequence of this, the reflex physiological action of the various organs upon each other, which is essential to their functional vigour, becomes impaired; moreover, the normal stimulus conveyed to the several tissues of the body is so disastrously interfered with that they become not only enfeebled, but hypersensitive to external influences and prone to disease. In this condition they afford an inviting soil for the development of cancer cells, while their lowered state of vitality, which is perpetuated by the unhealthy blood-supply, renders them an easy prey to the invading pathoplasm.

After perusing the foregoing pages my readers will probably not be surprised if I confide to



them my belief—nay, more, my conviction—that cancer of the mucous membranes, especially of the alimentary canal and air passages, is as a rule secondary to a rheumatic or gouty taint. Now, it is well known that these diseases are due to the presence of uric acid in the blood, this contaminated condition of the vital fluid, as I have before remarked, being known as uricacidaemia. It is this toxic element which gives rise to the painful symptoms of which so many unfortunately are the victims; and also to that alteration in the structure of the mucous membranes to which I have referred, and which would appear to favour the development of malignant disease. Now, it is a recognized fact that gout and rheumatism are preventable diseases. We are aware that their source of origin is invariably a steady ignoring of dietetic laws, and neglect of that important sanitary measure, the daily *complete* evacuation of the bowels. I say *complete* evacuation, because if it is only partial, as it so frequently is, therein lies a positive danger. What should be provided against is the possibility of faecal matter remaining for such a length of time in the colon as to permit of the absorption of its putrid fluid contents into the circulation, for rest assured this is an im-



portant factor in the synthesis of uric acid. It behoves everyone, therefore, to be thoroughly satisfied upon this important point, for it is a matter which, as I know, is not treated with the serious attention it deserves.

The fact must not be overlooked that those who are martyrs to gout and rheumatism may not be the only sufferers in consequence of this neglect of the hygienic laws I have referred to. It is, I think, generally recognized that these are hereditary diseases, and in my experience this fact has frequently been exemplified by the individual members of certain families possessing the characteristic mucous membrane covering the tongue, which proclaims the rheumatic taint. Now, it does not necessarily follow that these persons are actual sufferers from the diseases to which they have inherited the tendency, for even in such circumstances this may be warded off by careful attention to hygienic laws. The hereditary taint, however, is undoubtedly present, and with it coexists that idiosyncrasy which renders the individual more prone to this disease than his neighbour. Not only is this the case, but the departure from the normal standard which has been established in the mucous membrane also proclaims it to be a

favourable soil for the development of cancer cells. In this manner only is cancer hereditary; not in itself is there any heredity, but in the circumstances which favour its development. Some may say this is a distinction without a difference. I do not think so, as the contingent circumstances I referred to may altogether be prevented from coming into being. Nevertheless, a condition has been established which has so modified the epithelial cells as to favour their metamorphosis from benign to malignant entities; in other words, this power of withstanding irritation and recovering from its effect has been prejudicially affected by the influence conveyed to them through a vitiated blood-supply.

From what I have stated, it will be conceded that there must be degrees of invalidism affecting these cells, and in consequence their ability to recover themselves in cases of injury will vary accordingly; therefore a comparatively trifling injury in one case may exert a greater influence for evil than otherwise would result, had the recuperative powers of the cells not departed so far from the normal. It is this consideration which compels us to conclude that what, in one individual, exercises no prejudicial influence, in another may culminate in serious consequences.

For example, it is a well-known fact, that over-indulgence in tobacco invariably has a tendency to promote a congested condition of the throat. Now, this conclusively proves that tobacco acts as an irritant to the mucous membrane of this region, and if so, it must necessarily exert a much more baneful effect upon it when it is chronically weakened by a rheumatic or gouty taint; and we know uric acid in the blood has invariably this effect. Excessive smoking, therefore, cannot be looked upon in this connection otherwise than as an exciting cause to cancer of the throat and larynx; and I know that certain kinds of tobacco are more prejudicial than others, though it would be invidious to point these out. It is sufficient for me to state, that, in certain idiosyncrasies, tobacco is an exciting cause of cancer both in the tongue and throat, and this quite independent of the fact that the disease in the tongue may also be promoted by smoking a pipe which scalds this organ. If both sources of irritation, then, co-operate, how much greater must be the risk! but, fortunately, it is one which can be avoided without much self-restraint.

A potent predisposing cause to cancer of the mucous membranes exists in secondary and tertiary syphilis. It is only, however, when

the ulcer arising from this disease is implanted on a surface where rheumatism coexists that it would seem to take on the malignant form. I have seen one palpable instance of this nature, which quite recovered when the syphilitic condition of the blood was treated simultaneously with the epithelioma. I may add that the disease had been pronounced to be incurable by two independent throat specialists. This case illustrated most clearly the necessity of treating both diseases simultaneously, and led me to the conclusion that in every instance where epithelioma exists we must treat the rheumatic diathesis as diligently as the malignant affection. The first, I believe, is more amenable in those circumstances—as it is in its simpler manifestation—to aspirin and the salicylates than to any other drugs; while the recuperative powers of the mucous membrane, when freed from its gouty incubus by the employment of those remedies, can now be most satisfactorily re-established by the aid of radiumized water and thyroid extract, combined with measures tending to reinvigorate the enfeebled health.

## CHAPTER X

## CANCER OF THE RECTUM

LET me now direct my readers' attention to cancer of the rectum, which so frequently escapes observation until the disease has advanced beyond the curable stage. The amount of ignorance displayed on this subject is most reprehensible. I am inclined, however, to suspect that carelessness in making an examination is, in many instances, quite as responsible as ignorance for the errors in diagnosis which so frequently occur. For example, I have been consulted by a patient suffering from unmistakable epithelioma of the rectum, who had just been told by his medical attendant that his disease was "blind piles," whatever they may be.

Now, having repeatedly referred to the rheumatic diathesis, which I look upon as a predisposing cause of epithelial cancer, I would direct your attention for a moment to what I look upon as the exciting causes. These may be irritation, due to haemorrhoids, most probably those which have broken down and ulcerated,

or to slight erosions and fissures, either of the mucous membrane of the rectum or of the sphincter. I have been able to trace each of these as the starting-point of malignant disease in this region, and when observed in time they are quite amenable to treatment. The question naturally arises, How are these exciting causes to be avoided? I would suggest that, as each of them is as a rule due to constipation extending over a lengthened period, the remedy lies in having this corrected as early in life as possible. That this can be accomplished by dietetic rules being stringently observed there is not the shadow of a doubt.

The presence of hardened scybala in the colon, as is well known, interferes with free circulation in the haemorrhoidal veins. Now, as these veins are without valves, the tendency is for the portion below the stricture, produced by the pressure upon their walls, to become distended. This distension, if continuous for a lengthened period, becomes permanent, and a varicose condition of the veins results, and this is what we term haemorrhoids or piles. A catarrhal condition of the distal portion of the bowel is liable to be set up from the same cause, and erosion of the mucous membrane to super-



vene. By this sequence of events following constipation, not only does a direct exciting cause to cancer arise, but a vitiated state of the blood as a result follows from absorption of faecal fluids. This again acts indirectly in facilitating the development of disease by lowering the vital standard of the blood. The latter effect is produced, as can be readily comprehended, by the contamination of the vital stream, consequent upon the products of decomposition being absorbed into the circulation; the toxic effects thereby produced incapacitate the blood from performing the normal functions of a pure blood-supply. In consequence of this vitiation, every organ and tissue of the body suffers, and becomes *pro rata* prone to disease and *pari passu* loses its recuperative power.

We therefore cannot do otherwise than arrive at the conclusion that cancer, whatever form it assumes, is dependent upon quite a chain of events, which in process of time lead up to the fatal climax. It cannot, therefore, be conceded that it is due to parasitic, microbic, or any other such influence, but, as a writer who has introduced my views as to its pathology into one of his novels has aptly expressed it, "is a miserable plagiarism of healthy tissue."



Let us again ask ourselves the question, What is a wart, and what is a mole? The one is an exuberance of epithelial cells, the other of pigment cells, but cells which have departed from their normal status. In short, they are isolated areas of incipient cancer, but they are embedded in healthy tissue, which is composed of normal cells, and so long as these retain their inherent vitality, they are able to exist unharmed by the side of their adventitious neighbours, and possibly, as they often do, to absorb the excrescence. If, however, the parts immediately surrounding the pathoplasm should be irritated, and thus weakened, and so reduced in vitality below that of the wart, the reverse will be the result, and the abnormal tissue will commence to enlarge at the expense of its environment, speedily unmasking its malignant character, and proclaiming itself in all its virulent and merciless autocracy.

## CHAPTER XI

### SWEEPS' CANCER

SWEEPS' cancer is indirectly attributable to the irritating properties of soot coming constantly in contact with the mucous membrane of the

glans penis and thin epithelium layer of the skin in the folds of the scrotum. Filth, in short, is the exciting cause in a person who neglects the ordinary laws of health, and this applies specially to sweeps. I have seen this form of cancer occurring also in men who were constantly working amongst pitch and petroleum, but they were invariably individuals who seldom were guilty of the use of soap, and whose habits and mode of life were certainly not conducive to a healthy condition of the skin. It is not because of any specific properties possessed by soot, coal-tar products, or petroleum, that men working amongst these are liable to epithelioma of the penis and scrotum, but because of the irritation of sensitive surfaces produced and continued by constant contact with these substances, in a subject whose blood is in a vitiated condition. For it is a melancholy fact that men so employed rarely look upon cleanliness in any other light than labour unnecessarily expended, arguing that it is no use washing, only to get dirty again so soon. If such men were made aware of the unnecessary risk they run by their thoughtless neglect of ordinary sanitary, not to say decent, precautions, the probability is that we would speedily have the gratification of seeing

the death-roll from this special manifestation of the disease considerably reduced.

It is unfortunately too evident to admit of contradiction that men in the position of those I have referred to are most prone to trifle with those laws the observance of which is essential to a healthy standard being maintained. Functional disturbances, therefore, soon manifest their presence, and these are in course of time succeeded by a steady enfeeblement of the general condition of the system, which, as I have so often maintained, is the open door to disease.

In support of the views which I have just enunciated, there is a remarkable fact which I may be permitted to mention. This is that in 201 cases of epithelioma of the penis occurring in India, every manifestation of the disease was in Hindus, and not in Mohammedans; circumcision among the latter, no doubt, accounting for the immunity, which religious rite confers far-reaching hygienic benefits, amongst these being immunity from cancer. By this operation chronic irritation is avoided, and therefore a powerful predisposing cause of cancer and syphilis is removed. Its beneficial effects are markedly demonstrated amongst the Jews, for, so far as my experience teaches, in

this people cancer of the penis is almost unknown, and syphilis extremely rare.

It may not be out of place for me to express what for years has been my conviction regarding circumcision. It is, I think, a matter of regret that this religious rite, so rigidly observed by the Jews, has not been adopted by every nationality. It was undoubtedly viewed originally in the light of a hygienic precaution of the greatest value before it became law, and was thereafter made imperative as a religious enactment. Its beneficial results cannot be overestimated, both from a moral and physical aspect. Its universal adoption by the Jews tends only still more distinctly to demonstrate what a wise and far-seeing people these have always been. Had such a ceremonial been compulsory in every other nation, as it has always been with Jews and Mohammedans, there would have existed less immorality, and a greater immunity from specific diseases, than the history of Western civilization unfortunately discloses.

## CHAPTER XII

SOME METHODS OF TREATMENT OF EPITHELIAL  
CANCER

MALIGNANT disease, as we know, may attack any portion of the skin, but it is invariably the result of an irritation which is being constantly repeated and directed upon the part which ultimately becomes affected. Sweeps' cancer, for example, as I have remarked, is, in certain conditions of the blood, provoked by constant irritation induced and kept alive by the action of soot upon a certain part. In instances, again, where the disease selects other portions of the skin, we invariably find that considerable provocation has, prior to this, existed for a lengthened period, this being always of a character which excites the cuticle and underlying membrane (the rete mucosum) to a continuous state of morbid activity, which so frequently is the forerunner of malignant disease.

Many writers, in speaking of what should accurately be described as epithelial cancer,

designate this as a malignant ulcer, in preference to giving it its more alarming cognomen, and thus medical literature is strewn with chapters and paragraphs which treat of the disease under this designation. Perhaps there is good reason for employing this nomenclature, seeing that cancer of the skin in certain portions of the body, though identical in its every characteristic with that of the womb, lip, tongue, larynx, or any other mucous membrane, is very much less rapid in its development, therefore not so virulent, and, in consequence, more amenable to treatment. For example, Professor Isaconas and Dr. Pouloupoulos give five instances of complete cure of epithelioma of the cheek, ear, angle of the mouth, the inner canthus of the eye, and of the nostril. There can be no doubt that these cases were successfully treated without operation, as the portraits of some of the patients before and after the treatment of the disease satisfactorily demonstrate. A case quoted by Professor Isaconas will doubtless prove of interest.

A man, aged sixty, for eighteen years had a painless tumour over the left ear, which bled on the slightest touch. It gradually extended its area until it covered the side of the head



and neck. The growth became after a time painful, and commenced to discharge matter. Caustic was applied several times, but without producing any effect. In July 1899 the writers commenced to apply powdered hounds'-tongue—technically termed *cynoglossum*—which is a genus of herbaceous plants of the order Boraginaceae, comprising many species, natives of Europe and the United States. Some persons consider it a dangerous poison. So far as I am aware, it had never hitherto been employed as a remedy for cancer. However, in this instance it seems to have acted with very wonderful effect. The following is the method of use: After being washed with boracic lotion, the ulcerated surface is abundantly sprinkled with the powder twice a day, and covered with sterilized wool and a bandage. The powder used was that of the root, leaves, and flowers, and not the officinal powder, which is generally made from the root or bark only. When this treatment had been continued for five months, the discharge was arrested, the tumour ceased to grow, the elevated portions of the tumour fell off, and healing commenced from the edges towards the centre, and the writers conclude by saying "the patient is now quite well."



As a matter of course, a great number of methods have been tried in the treatment of epithelial as well as other forms of cancer, amongst which may be mentioned methyl blue; but treatment under these circumstances is generally 'pursued more with a view of giving relief to painful and disagreeable symptoms than with any expectation of effecting a cure. Dr. Coston recommends the local application of a 3 per cent. solution of methyl blue, in equal parts of alcohol and water. This should be swabbed all over the diseased area, and he says: "As the result of this treatment, I have found haemorrhage decrease in quantity, and the infiltrated area commence to grow softer and less liable to bleed." In combination with this local treatment, he advises tonics and alteratives; but what he means by the latter I am unable to comprehend.

Another method of treatment, though by no means novel, is recommended by Trunecek ("Klinisch-therapeutische Wochenschrift," No. 2, 1900), who warmly commends arsenic as the medicament of choice in the treatment of epithelial cancer, when the latter is still strictly local, and has not involved the neighbouring lymphatic glands, and when it is accessible from

without, and the arsenic can be so applied that it is not absorbed. This treatment is advised for cancers of the breast in their early stages. When the drug is applied to non-cancerous regions or areas, it excites no reaction, or at most a very trifling one. "The medicament," he says, "works most rapidly upon ulcerating lesions and on cancers of the embryonal type. Cancers of moderate dimensions are completely healed in three or four weeks." For the purpose of lessening the pain of the application, orthoform is mixed with the arsenic, the following prescription being used: Arsenious acid and orthoform, each 1 part; absolute alcohol and distilled water, each from 40 to 75 parts. This solution is painted over the cancerous surface, and forms a black scab, which steadily grows under daily repeated applications. This scab is not formed in any other kind of lesion. The author holds that the cancerous cells are first deprived of water by the alcohol, and that then their protoplasm is coagulated by the arsenic. Between the diseased area and the healthy tissue there is formed a line of ulcerations, which suppurate, until finally the entire epithelial infiltration is exfoliated.

Rossander ("Revue de Chirurgie," No. 2,

1900) calls attention to the fact that in 1891 he published a brochure upon the subject of curing epithelioma by injections under the skin of a certain solution.<sup>1</sup> These injections were repeated every three or four days, about 8 or 10 minims being employed each time. He states that one case subject to a small cancer in the right angle of the nose, which had been twice removed by the knife, but recurred and was rapidly spreading, in fourteen days was cured by this injection. A year later the patient was entirely well. A huge cancer of the face which had passed beyond the operative stage was not favourably affected. Two or three other cases showed favourable changes. One occurred in the person of a doctor, who developed an ulcerating wart, the result of irritation of the glands of his eye. In 1877 this was pronounced to be epithelioma, and was cut out. The wound healed, but later on the scar broke down. Arsenic and other applications were employed, with no beneficial effect. In 1891 the total extirpation of the growth, together with the eye, was recommended. The ulcer at that time involved the entire area of the nose, the forehead, and the

<sup>1</sup> So far as my memory serves me, this solution was composed of 1 per cent. of caustic potash in water.

cheek, extending down as far as the nostril, and had already eaten into the cheek to some extent; about a third of the upper eyelid was destroyed, and the lower lid was entirely gone. Another form of treatment was tried, but without success. The disease seemed to be progressing, and rapid sloughing of the diseased parts took place, and temporary healing occurred. A few months later, however, the disease returned, and treatment on some of the old lines was resumed. About the middle of 1893 the patient presented himself to Rossander for treatment, with the result that in two and a half months there was nothing left of the tumour but scar and tissue and a small wound, which still showed epithelial elements. The patient then ceased treatment, and some years later died. The second patient was eighty-nine years old, and was seen in 1895. She was evidently suffering from that form of cancer which takes its origin from a mole or other pigmentary deposits, and which, as I have before remarked, always retains pigmentary cells in its composition. Treatment was commenced by injecting ten drops, in four different regions, about the tumour, the needle being driven beneath the growth down to the bone. This was repeated ten times, when the cancer-tumour was

found to have speedily disappeared, and four years later the patient was perfectly well.

Many other methods of treating cancer have been recommended, and to a certain extent adopted, but these do not invariably hold out an ultimate cure—*e.g.*, frequently in medical literature we come across an article headed “The Treatment of Cancer of the Stomach,” or other parts of the body, when it only refers to palliative treatment—that is, to the relief of suffering, death in every instance being looked upon as inevitable. What we desire most of all is not so much to treat the disease, though that, of course, is very important, but to take measures which should prevent it ever asserting itself, and thus require treatment as a malignant affection, because, as I have so often reiterated, cancer is invariably preceded by a condition of the parts which, though diseased, is without doubt readily amenable to treatment. As Dr. Lewers aptly says, “The great desideratum in the treatment of cancer is early diagnosis. Any improvement in this direction depends to some extent *on a better appreciation on the part of women themselves of the early symptoms of the disease*, and especially when bleeding after the change of life, or bleeding occurring at any earlier period, happens

between the menstrual epochs." He says, "Early diagnosis also depends partly upon the profession," while I maintain that the surest method of stamping out this horrible scourge is to educate the public, so that they will be capable of recognizing long before the malignant stage has been reached the diseased condition, which, if allowed to proceed, will eventually culminate in cancer. It is then medical advice should be sought, and when there is a prospect of this being of value to the patient. Dr. Lewers also states: "It is equally important to bear in mind that patients suffering from cancer of the womb may, and generally do, for a comparatively long period look quite well. They may be well nourished, or not unfrequently even fat, and as regards the aspect of their face, they may appear to be in perfect health." This, I need hardly say, will not continue when the disease has advanced to any extent.

## CHAPTER XIII

### PROFESSIONAL PREJUDICES

THE "Daily Mail," in a leading article, cogently remarks—"It is well to remember that the early



years of all great and epoch-making inventions are beset with infinite difficulties. The way of the inventor and the pioneer is even harder than that of the transgressor." This is equally true of the reformer, especially when he has to contend with deep-rooted prejudices, which, though founded on error, have defied the convincing evidence derived from advancing knowledge and yet remain embedded in the psychological matrix, which has so long afforded them a resting place. They would seem to be as immovable as a mighty boulder until some convulsion of Nature shattered it, and sent it in broken masses to find another resting place, but in a much less exalted position than it previously occupied, and possibly one more in keeping with its defunct claims for pre-eminence. Such unfortunately, I regret to say, is the unhappy position of affairs in the medical profession to-day, just as it has been more or less throughout its whole history.

It has been often remarked that we are only on the threshold of medical science, if even we have advanced thus far; and if we pause for a little to consider the prejudices that exist, and which are hugged as if they were the most precious possessions, this humiliating condition of affairs is

not to be wondered at. Why, it is only within the last forty years that any real progress has been made, and during that period any advance that has been achieved has only been at the point of the bayonet.

Had it not been for chloroform, where would surgery have been? Who can estimate the boon this one discovery has conferred upon the human race? And yet at the present time, seventy years after its introduction as an anaesthetic, its mode of action and proper method of administration are not understood. Every year hundreds of lives are sacrificed to the callousness and indifference, not to say pigheadedness, of medical men, for which the medical press is largely responsible. Many are still living who can remember the foolish, I might even say the criminal prejudice, with which chloroform was assailed. Patients were refused its benefits, because its merits were not studied, and therefore not understood. Others opposed its employment, as it was (they maintained) opposed to the teaching of God's word, forgetting that the only time where we have an account of the Almighty performing an operation which otherwise would have been painful, we are told He first cast Adam into a deep sleep.

The next discovery which we note, but which would have been shorn of a great part of its value had it not been preceded by Simpson's supreme work, was Pasteur's *magnum opus*, when he unfolded to the scientific world the far-reaching results of his investigations upon decomposition. These Lister took hold of, and applied to the elucidation of what had hitherto been a closed book, viz., the causes of suppuration in wounds and hospital gangrene. Lister, however, along with his followers who worked with him and assisted him in his noble work, came to recognize the fact that it was not so much antiseptic surgery, as aseptic measures, that were essential to success; and had this not been the outcome of Lister's discovery, I feel certain no real advance would ever have been made in that which we have been in the habit of designating antiseptic surgery. What it should be termed is *aseptic* surgery, for if we are scrupulously clean in everything that pertains to a surgical operation, and take precautions which will ensure the aseptic condition of hands, instruments, and the part to be operated upon, we may safely rely upon a successful operation being the result, always with the proviso, of course, that the surgeon knows his business. It is to his

disciples then, who, with Lister, discovered where the real advantage lay, that we are indebted to the advance that has been made in surgery during the past three or four decades; but how sadly handicapped would surgeons still have been had it not been for chloroform!

Lister's theories and Simpson's discovery were scoffed at by members of the medical profession at the very period when they should have been welcomed and tested, to ascertain what good was in them; but, thank God, they survived the persecution they received. In like manner was Brown Séquard treated when he pointed out the therapeutic value of certain gland substances. The amount of abuse he received at that time for daring to make the statements he did would hardly be credited at the present day, and yet it is only about forty years ago since he put forth his views, which now have been universally adopted. In a similar manner will the man be treated who dares to say cancer can either be prevented or cured when it has manifested itself. In spite of this terrible fate, I will venture to repeat what I have rehearsed on more than one occasion to the profession—viz., what the nature of cancer is, and how it may be prevented, and, if its existence is detected early enough,

how it may be cured. In doing so I may be pardoned if occasionally I repeat myself, but this will only occur when I am endeavouring to put my views into language which will be readily understood by the non-professional reader. In this connection I do not fear that my readers will charge me with dishonesty or arrogance if I insist that I claim priority with regard to the pathogenesis, pathology, and treatment which I set forth.

## CHAPTER XIV

### THEORY OF THE ORIGIN OF SCIRRHUS

WE have at least one palpable example of a cell separating itself from the organ in which it took origin and entering another, there producing unmistakable results. I refer to the ovum, which, when it has left the ovary, either before it gains entrance to the Fallopian tube, or in its passage through it, or after it enters the womb, imparts an enormous stimulus to the latter organ, whereby its blood-supply is temporarily increased; this proceeding to such an extent as to bring about rupture of the bloodvessels, which culminates in the pheno-

menon we term menstruation. (This is termed the "physiological" sequence.) At this period of its existence the cell has parted with none of its vital energy, and the course of events does not preclude the possibility of its retaining that energy, and possibly having it augmented by the cell's transference to a nidus possessing great vascularity, and so providing a soil which would develop within it greater potentiality than its original surroundings afforded. If impregnation does not take place during the passage of the ovum, then the menstrual flow would appear to remove the cause of excitement, and the previous condition of the parts will become re-established. If, on the other hand, a spermatozoon (another living cellular body) gains an entrance into the ovum, it finds there a satisfactory nidus and pabulum suitable to its initial stage of existence, and new energies being thus imparted to it, it commences a new era in its career, and develops into the embryo; and, while effecting this, it stimulates the ovum into renewed activity, whereby it is enabled to provide nourishment for the progressive development of the invading spermatozoon.

Is it unreasonable, then, to infer that it is quite possible for a living cell to be transferred by



the lymphatic vessels from one organ to another, and becoming endowed, by virtue of its new environment, with a more active state of existence, to develop an increase of energy far exceeding the primary capabilities that it would have been possessed of had its location remained unchanged? Moreover, if the surrounding medium should prove more conducive to the growth and development of the wandered cell, it is only reasonable to suppose that the progeny of this cell would progressively become more vigorous, rapacious, and virulent than its parent. No one will dispute the fact that *morbid* cells are transmitted through the medium of the lymphatics from one gland to another; why, then, should not the same rule apply to cells having at the moment no pathological or pathogenic (disease producing) significance?

Assuming, then, that cells which, when in their native habitat, may be considered perfectly innocuous are enabled to migrate—nay, in all probability, do pass from one organ to another by lymphatic vessels—the question arises, Do they undergo a morbid change upon their transition, or are they but thrown off from their original sphere of existence without having undergone any alteration in character; or, prior

to this, have they exhibited some morbid activity which rendered them obnoxious to the organ from which they have escaped; and is it in consequence of this that they have been ejected? Is this also the reason that their rapacity and virulence become developed when a new and more constantly vascular nidus has been attained? For we must remember the ovary is only periodically active. It seems hardly probable that in scirrhus of the mamma, for example, the disease ever develops *de novo* within the gland, or why would it not manifest itself at several points simultaneously, instead of proceeding from one centre, which it invariably does? Again, why would it completely devour in its ravages and *supplant* the normal tissue, instead of simply altering somewhat its character, as obtains in adenoma (or simple tumour of the gland), and in the initial stage of epithelioma?

One author speaks with very great assurance of the "nature of cancer as being almost entirely due to a specific morbid material, micro-parasite, or ptomaine, or to one or other of their products, and as being closely allied to other micro-parasitic diseases, such as tetanus, tuberculosis, diphtheria, ague, actinomycosis, syphilis,

and others";<sup>1</sup> and he maintains therefore "that the study of cancer and its treatment must needs be experimental, and once the morbid material was found, it could be dealt with in the same way as other specific diseases." This, to my mind, is rather a large order, nor does it in any way clear up the pathogeny of the disease. Still, the suggestions, though vague, may be of value.

It has been amply demonstrated by Pozzi of Paris that there exists a lymphatic connection between the ovary and mamma. We have for long been aware that there is unquestionably a nervous connection, and it can only be due to this fact that the physiological relationship is sustained. No one will dispute this physiological reciprocity (if I may employ the term) which exists between the womb and ovaries and the mammae. Why, then, not a pathological and therapeutical relationship as well? I do not wish it to be inferred that the vessels run without interruption from the ovary to the mamma, as we are fully aware their course is far from being direct. But assuming, as we have every reason to do, that there is a communication by means of the lymphatic system

<sup>1</sup> Other writers, as I have observed, hold other and quite diverse theories as to the origin of cancer.

between these organs, is it not possible or highly probable that cells possessing peculiarly active instincts may become detached from the ovary, and find their way through these vessels into the glandular structure of the mamma? Since we are aware that the ovary with apparently little provocation is the incentive to so many forms of hyperplasia, cystic, fibroid, or simple hypertrophy, this question does not seem at all unreasonable. These pathogenic ovarian cells being foreign bodies, would, in the ordinary course of events, be removed by absorption if the mamma is in the hygienic and vigorous condition which in a state of perfect health would naturally obtain. Yet, we must bear in mind, the foreign or adventitious cell, notwithstanding this possible inherent absorbing power of the gland, may be enabled to retain its identity, and take up its abode in its new environment without loss of its vital energies. Nay, it is quite possible these may be added to by its altered circumstances, although, until a fitting opportunity presents itself, it remains innocuous. On the other hand, the new conditions in which it is placed in all probability favour its potentiality, while its presence as an invader must of necessity produce enfeeblement of the tissue in

its immediate neighbourhood. The consequence is the weaker goes to the wall, and if the aggressor proves the stronger it speedily establishes a footing, and preys upon its host, playing very much the same rôle that a parasite would do. But that it does not partake of the nature of a parasite in the proper sense of the term, as has been suggested, may be assumed without reserve. It must, then, as a matter of fact, have originated within the body, as the previous sentences indicate. Therefore its existence would appear to be consequent upon some conflicting or aberrated physiological phenomenon. The effect of its invasion, so far as I can ascertain, cannot by any possible reasoning accurately be described as a degeneration of tissue. Furthermore, its invasion is not marked by any inflammatory symptoms. Were it so, phagocytosis (the action of the white corpuscles of the blood in getting rid of toxic entities) would be brought into operation, and probably arrest the disease at its onset. A more satisfactory definition would be: a deposit of adventitious cell or cells, which multiply with alarming rapidity, in their process of development preying upon and supplanting the normal though enfeebled structure in which they find a habitat.

Several questions are naturally suggested in considering such a theory: first, what is the *fons et origo mali* (which question has already been answered theoretically), or does the nucleus of disease exist within the organ *ab initio*? Secondly, suppose that such a cell or cells were introduced into a gland whose functions have never been called into physiological activity, and whose vitality in consequence will, in process of time, have become very much enfeebled; will these cells be able to plant themselves, and find a congenial soil for their rapid and abnormally vigorous growth and multiplication? This question has also been to a certain extent answered. On the other hand, do married life and child-bearing, by calling the mammary gland into frequent healthy activity, so alter it intrinsically as to render it proof against any such invasion? In other words, do the conditions of life make it more powerful than other entities, which may possibly find their way to its substance in the ordinary course of events, and may even be present without being permitted to exercise their potency?

This problem is suggested by the supposition that a gland which has performed its normal functions during a period of years would natur-



ally possess resisting power over disease, which would not obtain had it remained during this period in a passive condition. In other words, is the gland so altered in character, by being frequently stimulated into functional activity, as to be rendered an unsuitable nidus for the development of adventitious organism or organisms; or are cells having morbid tendencies not produced when the laws of nature have been physiologically complied with? One circumstance seems to be beyond dispute, which is that the altered physiological condition of the gland, or of a distant gland upon which it is dependent for natural stimulus, constitutes the predisposing cause to diseases of this class. It is not difficult to comprehend, then, that if a cell, which would remain normal in its tendencies in its own special environment, were conveyed to a structure which had the capability of supplying it with pabulum stimulating it to a more vigorous growth, it might develop with extraordinary facility, and attain such gigantic and abnormal proportions as to alter its character entirely, thus converting it from a normal to a pathological structure. We are not unfamiliar with instances where an alteration of environment produces most marked effects in cell development. Take, for example,

the case of mycelial growths (ordinary mould is a good example), which afford a convenient means of illustrating the subject. If the spores from the mould of ordinary cheese be transplanted to a piece of ripe pear, it will be observed that the resulting product is of gigantic proportions compared with that of its parent. It seems only reasonable, then, to infer that a simple and benign cell may in altered surroundings have its powers of growth and propagation so increased as to enable it to assume similar proportions, and develop malignant tendencies within the human body; the malignity, be it said, consisting in the fact that the normal structure is preyed upon and supplanted by the invader. In consequence of this its means of aggression are multiplied, and it extends its ravages, not only in the original seat of action, but to the area in the immediate neighbourhood.

It may seem to my readers presumptuous, if I state that the prime object I have in view is to attempt to clear up the pathogeny of malignant disease. I have, notwithstanding, deemed it quite in harmony with my views to throw out the above suggestion, so that others who possess facilities for studying this important disease

may, if they think fit, pursue the line of study which I have indicated. My present object is to invite attention to the intimate pathological and therapeutical relationship which exists between diseased organs and those in sympathy with them. Furthermore, it is not my intention to go much beyond my personal experience when dealing with the practical issue at stake.

## CHAPTER XV

### NATURE OF SCIRRHUS

THE question which presents the greatest difficulty of solution, assuming my surmises to be correct, is to ascertain from what cellular structure the starting point of cancer is derived. Other questions of almost equal interest are naturally suggested. For example, how does it occur that cancer of a certain class is most commonly met with at a certain period of life, and in unmarried and sterile women? Yet it must be confessed that notable exceptions to this are frequently met with. I may be permitted to state that I have removed scirrhus of the mamma in women whose ages varied from twenty-seven to

sixty-three—but these extremes are very rare, the most common ages being between the years of forty and fifty-five.

Again, how is it to be accounted for that cancer is the exception, and not the rule, in women whose social conditions are all alike? This question may be answered in many ways, each of which, from my point of view, is separately correct. First, although a great many women may, and probably do, carry about with them what might in certain circumstances be considered the germ of the disease, yet this continues to remain latent if no conditions favourable to its development arise. For example, if the mamma remains unimpaired in health, it is not likely to become a prey to disease of any description, while, on the other hand, if it becomes enfeebled, either by a sudden blow or continued pressure, or undue or prolonged exposure to cold, it is not difficult to comprehend that the result may be different. At one time I was inclined to cast doubt upon the statements of patients who insisted that the nodule they first observed in cancer of the breast was due to, and closely followed upon, a blow. My theory at that time was that the nodule must have been present before, and that

the pain of the blow was intensified by falling upon the diseased structure, and thus, what until then had been painless and unobserved, was brought into notice. Now I have changed my opinion, and have reasons for believing that a blow on the breast may, and does, by temporarily weakening the part, provide an opportunity to the invading cell, if present, to assert its individuality and malignancy, whereas under more favourable circumstances this might have continued in a passive condition. Secondly, the condition of the womb and ovaries (both of which we know exert a powerful influence upon the mammae) may possibly, by reflex influence at each monthly epoch, be capable of transmitting the requisite amount of stimulus to supply or provide these glands with the necessary vital energy essential to their continued health and vigour, and thus, by what might be termed a vicarious stimulant, fortify them against attack. We are well aware that in the nursing mother an enormous blood current is constantly being poured through the mammary vessels to enable the desired quantity of milk to be extracted from it by the gland. It stands to reason, therefore, that the condition of the organ will in consequence become physiologically very much

modified. We are also aware that the ordinary functions of the ovaries and uterus remain in abeyance during the period occupied by pregnancy and nursing. On the other hand, the excited vascular condition of the uterus, with an enlargement of the mammae but no secretion of milk to speak of, takes place during pregnancy. After the birth of the child the enlargement of the mammae becomes more pronounced, while the secretion of milk is established and continued. Moreover, this excitement of the mammae exerts a reflex influence on the uterus, promoting involution, or the very converse condition to that which in the first instance seemed to provoke the enlargement of the milk glands. Is it not only reasonable, then, to infer that, when reflex hyperæmia—which is rather the exception than the rule—occurs at every monthly period within the mammae, this may supply in some measure a stimulus resembling that conveyed in child-bearing; and thus there may be conferred upon the mammary glands a potency which enables them to resist the development of morbid growths, a power they would not in other circumstances possess? I propound this question because such reflex effects upon the mammae are not uniform.



I can only recall three cases in my experience of scirrhus occurring in married women who had borne children, each of whom succumbed to the disease, although operation was resorted to. As these ladies were all strangers to me, and as I was not at the time giving much attention to the etiology of cancer, I did not go into their family history as I would now be inclined to do.

It would be interesting to note the proportion of women who have borne children and subsequently become the victims of scirrhus, and to know whether they would have escaped if they had taken upon themselves the maternal duty of nursing their offspring. It would also be interesting to learn if there had been present any uterine disease which had caused secondary sterility to ensue. There is no doubt that an unhealthy uterus reacts, in the first place, upon the ovaries, and in the second upon the mammae, and in some instances may even do so primarily. Unmistakable evidence on this latter point was demonstrated to me a short time ago by a young married lady from Banffshire, who came to consult me in consequence of a fibroid tumour on the right side of the uterus. The right mamma in this case was completely atrophied. She was

desirous of having the tumour removed, and it was with considerable difficulty that I prevailed upon her to defer the operation for two months until she had tried the effects of mammary gland extract, which was followed by a complete disappearance of the tumour.

A great many absurd notions are prevalent as to the effect of certain articles of diet in predisposing to the development of cancer, some holding that certain vegetables—tomatoes for example—tend to produce the disease, while others have been led to believe that other articles, which I have referred to elsewhere, have a like result. I need hardly say that, from my point of view, such theories are, in the main, absurd. There is one coincidence, however, which I have observed, and that is in several instances of cancer of the breast the patients had an abhorrence of milk. Now this is strange, seeing it was the milk gland which was affected. In discussing the question of cancer with a colonial medical man of large experience, he told me that, though the coincidence had not struck him before, yet he remembered four instances of scirrhus of the mamma in which this dislike to milk had been commented upon.

Now, an idiosyncrasy of this nature, one would

suppose, might lend itself in some measure towards influencing the nutrition of the various organs. So far as I am aware, there is no article of diet which so completely and satisfactorily supplies the requirements of the economy as milk does, neither is there an article of diet which is so easily assimilated. From it is absorbed all the nutrition which the various organs require, when they are incapable of assimilating anything else. By its means these organs are maintained in a healthy condition, and continue to develop their functional powers until they are capable of utilizing other substances for their nutriment, and thus become independent, to a certain extent, of milk; but I question if an omnivorous animal like man can live without this important article of diet and at the same time be a perfectly healthy individual. If milk is capable, as we know it is, of providing for all the requirements of the infant—being sufficient, in fact, to supply every necessity of its life and development—it stands to reason that the bodily stamina must suffer by its complete withdrawal. If this is so, those organs which, from physiological causes, have remained in a passive state of existence, such as the mammae in nulliparous women, and have in consequence become rather

accessories than active organs, will be more prone to disease than those structures which have been maintained in vigorous activity. Hence the female breast in these circumstances will be more liable to disease than the mammae of women where periodic functional requirements have stimulated their vital energies to the full extent, thereby increasing their vascular and nervous vigour, and therefore their power of resisting pathogenic organisms. Moreover if by marriage the ovaries receive their normal stimulus, these will be less likely to exert an unhealthy influence upon the mammae, which, I am convinced, in other circumstances they are liable to do. Now, if to these social conditions is superadded the withdrawal of an important—nay more, of an essential—article of diet, whereby these organs must necessarily suffer, I hold that in this we have, at all events, a predisposing cause of cancer. Notwithstanding all this, however, I am strongly inclined to the belief that the vitality of the mammae, even when they are not called into physiological activity, is sufficient to resist the latent cancer cells, and keep them in abeyance if no exciting cause has still further prostrated the healthy vigour of the organ. Amongst these exciting causes, as I

have indicated elsewhere, may be mentioned direct injury by blows, etc., exposure to cold, or any other accident, such as under other conditions would only tend to produce a transient effect.

## CHAPTER XVI

### TREATMENT OF SCIRRHUS

IN dealing with the subject of inoperable cancer, one should be able to define the border-line which divides that set of cases where there is a reasonable prospect of effecting a complete cure, if this ever exists, from those where the probabilities are the reverse. At the same time, we should not overlook the fact that cancer has proved in not a few instances to be curable by Nature's unaided efforts. That these efforts can be materially assisted I have every reason to believe, and on several occasions it has been my good fortune to have this belief amply confirmed. But before we can hope for any extended satisfactory result in this direction we must cease from generalizing the various phases of the disease under one name, as we have

hitherto been in the habit of doing. Our aim should be to investigate the pathogenesis, the pathology, and predisposing cause of each type separately.

It is not within my province at present to dwell at length on this point, as I have already done so, but what I maintain is that if, as has been demonstrated, Nature, on rare occasions certainly, has under favourable conditions been enabled not only to arrest the progress of malignant disease, but actually to conquer and dissipate it, and restore the parts to their normal condition, we cannot but conclude that there must exist a power within the economy to effect this desirable result, though its potency may not always be available. It should be our aim, therefore, to discover wherein this lies, so that we may be enabled to nurse it and develop its potentiality whenever malignant disease manifests its presence.

We must not overlook the fact that a cancer cell is intrinsically weaker than a normal cell. So far as I have been able to observe, cancer never attacks a structure that has not previously and continuously been prostrated by one cause or another. This may have been idiopathic or traumatic, or most probably both combined.



It is unnecessary for me again to discuss fully my views on this important point, as I have done so elsewhere. This, however, I feel impelled to reiterate: that what we term cancer, and which we only recognize as such when there can be no mistake about it, is frequently present in a latent condition, and may remain so for an indefinite period previous to its assuming its undeniable existence. It has only hitherto been waiting its opportunity—which is brought about by physiological inadequacy, combining with external causes—to develop its malignancy. When a commencement in this direction has been inaugurated, the organ, which of necessity must have previously been weakened, appears to have had, in addition, its recuperative power still further reduced by contact with the aggressive pathoplasm, the result being that it rapidly succumbs to it. If only it were possible for inflammatory action to be set up in these circumstances, I imagine phagocytosis would be able satisfactorily to deal with the adventitious cells. Matters do not proceed on these lines, however, but by an insidious power the disease seems to prostrate, then feed upon the tissue in its immediate neighbourhood, thus gradually and surely extending its ravages and invasion,

simultaneously paving the way for its further progress.

We are aware that epithelioma has its origin in what was at one time a healthy epithelial cell, and melanotic cancer in a pigment cell, but in scirrhus another and more difficult problem presents itself when we seek its origin. In this instance, as I have before stated, we have ample reason to infer that its source of origin is not within the organ attacked, but proceeds from an adventitious cell or cells, which have migrated from a distant organ. I again refer to the fact that the lymphatic vessels are continuous from the ovary to the mamma. I see no reason, therefore, why a morbid ovarian cell should not be able to travel from the one organ to the other, and there set up a new and pernicious influence, just as a pathogenic cell is enabled to find access through the lymphatic vessels to glandular structure at a distance, and there set up inflammatory disturbance. I repeat, therefore, that I am disposed to attribute to the ovary the credit of being the source of scirrhus in the female, because we are well acquainted with its vagaries, and, moreover, no other cellular structure in vascular connection with the mamma possesses such powers of develop-

ing new and oftentimes extraordinary offshoots as the ovary does.

As to the treatment of cancer in whatever form it presents itself, I would like to ask if surgery has any cause to be satisfied with the results it has obtained. I must confess my experience has not been encouraging, and it is years ago since I made up my mind that I would never operate again for this disease; believing, as I do, that in every instance the tumour is composed of what at one time was normal tissue, but which has altered its character, and undergone a pernicious metamorphosis, due, in one or two varieties of the disease, to prolonged irritation of a part, and in scirrhus to the invasion of an organ, which has first been handicapped, being physiologically starved of its natural stimulus, and further prostrated by external and internal causes, thus giving the invading organism the opportunity to assert its malignant powers. I hold that it should be our endeavour to re-establish by every available measure the vitality and therefore resisting power of the tissue attacked. This can only be accomplished by removing toxic material from the blood, and restoring the integrity of those organs upon which the affected parts

depend for their physiological efficiency. Moreover, every circumstance which tends to impoverish the general health must of necessity tend more or less to develop activity in what otherwise might remain latent disease. The disastrous result is brought about in several ways: first, the disease lowers the vital powers of the part involved; secondly, it acts detrimentally upon the organs upon which that part is dependent for its physiological stimulus; and thirdly, the toxic material which is present in the blood conspires to act perniciously on both.

We must not ignore the fact, and an important one, that the health of every organ of the body is more or less dependent upon the functional activity of another. We thus find that women who are nulliparas are much more liable to scirrhus than those whose mammary glands have been repeatedly aroused into action by uterine and ovarian influences during successive pregnancies and periods of lactation. This at least has been my experience. Now, many observers have demonstrated, and the fact was even recognized by the ancients, that the thyroid gland plays an important part in sustaining the integrity of the uterus and ovaries. This beneficial effect is also reflected upon the mamma,

and it was the knowledge of this fact, together with observing its physiological action in the development of the integument, which led me to employ thyroid extract in the treatment of malignant disease of these organs, and, as my results have shown, with considerable success. It is too late, I am afraid, to expect any satisfactory result from oöphorectomy when scirrhus has made itself manifest in the mamma. It resembles too much the shutting of the stable door when the steed has been stolen. The rationale of thyroid feeding is so apparent that I fail to comprehend why its employment is not more frequently resorted to. It goes without saying, however, that one would be foolish to rely solely on this in the treatment of such a potent disease. Active measures must of necessity be simultaneously employed to sustain the general health, while every barrier against this consummation is removed. At the same time, measures which militate against the vitality of the adventitious structure must be made the most of. I have found the inunction of an 8 per cent. mixture of cocaine and morphia in vasogen a very useful application. This would appear to act unfavourably upon the adventitious tissue, while producing no prejudicial effect upon the

normal structure, but rather the opposite.<sup>1</sup> I have had frequent instances where this plan of treatment has proved a useful adjunct in arresting and removing scirrhus. When the above internal and external remedies are supplemented by the addition of local baths of superheated air, the effect is much more rapid.

The treatment may be summed up as follows : The equivalent to five grains of thyroid extract as thyrocol are given three times daily, and always under medical supervision. During the administration of this substance the state of the circulation must be carefully watched, and the dose continued or modified according to circumstances. With regard to the local inunction of the morphia and cocaine vasogen ointment, I recommend that a piece the size of a small pea be well but gently rubbed in over the indurated portion of the gland at least twice a day, and the rubbing continued until the ointment is absorbed. In many instances I have observed that this is apt to be followed by an eruption of minute vesicles upon the surrounding skin, but this is readily soothed by the application of

<sup>1</sup> Dr. Snow states that hypodermic injections of morphia and cocaine delay, if they do not actually prevent, recurrence of scirrhus after operation.



carbolized zinc ointment, and need give no concern.

Supplementary to the above, considerable benefit is often derived from hot-air douches confined to the mamma. My method of accomplishing this is to propel the hot-air at a pressure of three, four, or even five atmospheres. This may be repeated at least every day. The effect of this douche is to stimulate the circulation in the whole gland, and simultaneously act injuriously upon the pathoplasm. Air heated up to  $300^{\circ}$  can, with perfect safety, be applied without any risk to the skin, and if after the douche the part is enveloped in two or three layers of flannel, the beneficial effect upon the circulation will be continuous for some time after the hot air is withdrawn. As to the general hygienic measures, which must also be attended to, they are of equal importance.

Before leaving the subject of treatment permit me to repeat—and this cannot receive too much attention—that in every disease, and certainly cancer is no exception, it should be our aim to avail ourselves of every means in our power to maintain in healthy functional activity the digestive and excretory organs, otherwise how can we reasonably expect to obtain the full benefit

of that indispensable ally, the *vis medicatrix naturae*? The blood must be freed from contamination by toxic material, consequent upon a faulty action of the kidneys and skin, or by re-absorbed faecal fluids, which is inevitable if constipation exists, or from bile, dependent upon an imperfect action of the liver. If any one or a combination of these conditions exist, not only is the direct effect of an impure blood-supply the result, but a directly baneful influence is exerted upon every organ of the body. The blood itself becomes a seat of disease, and the nervous apparatus, always dependent upon a healthy blood supply for the performance of its various necessities, is not qualified to impart that nervous energy to the various organs which is essential to their well-being and necessities, if they are satisfactorily to perform their several duties in their respective spheres of action. It was my privilege to be the first<sup>1</sup> to point out how constipation, producing auto-toxaemia, thus becomes a direct cause of anaemia and rheumatism, and also a predisposing cause to many other diseases; and I know of no factor more responsible than chronic constipation is for the various ills that flesh is said to be heir

<sup>1</sup> See "Lancet," 1880, vol. i, p. 243.

to, but which it would never inherit were the laws of health not so grievously ignored. And let me impress upon my readers that constipation is prejudicial to quite as great an extent as the continuous breathing of a contaminated and therefore poisonous atmosphere, due to exhalations from sewage and other receptacles of decomposing matter.

## CHAPTER XVII

### CAUSES OF CANCER OF THE STOMACH

I HOLD that wherever cancer is produced, whether it be in the lip, tongue, throat, oesophagus, stomach, liver, uterus, mamma, penis, or any other organ or surface, we must have had present for a long period previously to the manifestation of the disease constant or at least almost consecutive irritation of the part primarily attacked. To illustrate what I wish to impress upon my readers, let us consider what circumstances would tend to lead up to cancer of the stomach. I say lead up to because I am convinced, as I have so frequently iterated, that disease, whatever be its nature, is invariably

the result, either directly or indirectly, of some breach on our own part of hygienic laws. Phthisis is contracted because we deprive ourselves of a sufficient amount of the air of heaven, so amply provided by a bountiful Providence, and always at our disposal. Badly-ventilated dwellings, public buildings, and railway carriages, reeking with the germs of disease, and with their lack of efficient ventilation rendering the poor deluded passengers prone to any form of infection, with which the upholstery is saturated, and which is launched into the atmosphere on every movement of the unconscious victim, are each and all veritable death-traps. The amount of disease that is contracted in railway carriages with their pernicious system of heating would be appalling if it were reduced to figures, and yet the evil is permitted to continue and extend, because neither the public nor the State will be at the trouble to take the matter in hand. It is the invisible, but not the less real and potent foe we have most to dread; and it is due to foolhardy neglect of simple and feasible measures that disease of every description is enabled to obtain a footing in man or animal.

Where ventilation is efficient, man's resisting power to disease is at its acme, other things

being equal, and, *pari passu*, the disease germ is at its greatest disadvantage; while in badly-ventilated places the order is completely reversed. It surely needs no argument to make this statement acceptable to everyone who lays the remotest claim to common sense. It is the frequent repetition of being the victims of an unhygienic condition of the bowels and of the air we breathe, which in process of time produces such a pernicious effect upon the general health, and one which is liable to become permanent. It follows that, when the normal standard is thus reduced, the individual drifts imperceptibly into an unsatisfactory condition, and becomes prone to contract any disease by which he may be assailed. This, I am convinced, is invariably the precursor of disease, and probably the most frequent predisposing cause we are cognizant of. Other depressing circumstances, such as insufficient food, exposure to cold, worry, excess of any kind, sedentary occupations, etc., all tend in the same direction, and when more than one of these co-exist of course the liability to disease is *pro rata* still further increased.

It is cancer, however, that we have especially to deal with at present, yet the rules that apply

to other diseases are of equal importance with regard to it; but in order that cancer may manifest itself, it is also a *sine qua non* that the affected part should have been subjected to persistent irritation for a longer or shorter period, or have received a direct injury. I therefore hold that a debilitated condition of the general health is not sufficient of itself to induce cancer, but if, superadded to this, a part susceptible to the disease receives further provocation, there is thereby implanted, as it were, a much weaker spot upon an already enfeebled constitution, and there cell metamorphosis is liable to supervene. I trust, therefore, it is only necessary for me to make this statement to impress upon my readers the necessity of endeavouring to obey as rigidly as possible the laws of health. If they will do this, not only will life be prolonged, but freedom from disease be assured.

Now, with regard to cancer of the stomach, let us for a moment consider in what class of society it is most prevalent. By this means we shall probably be enabled to arrive at a knowledge of the most efficient means of diminishing its frequency. My experience, as a matter of course, may be at variance with that of other observers, but I feel assured that, if difference



there be, it will be very slight. When the stomach has been the seat of malignant disease in cases that have come under my observation, the subjects have generally been individuals in comfortable circumstances who have had the opportunity of gratifying their appetite, and who have taken care they did so. Moreover, they have, as a rule, been of sedentary habits, neglecting, in their attention to their business or profession, the observance of healthy exercise and attention to hygienic law. Lawyers themselves are daily breakers of those laws the rigid observance of which is essential to the preservation of a healthy performance of the functions of the various organs of the body. The day's work is in many instances commenced without a complete evacuation of the bowels. The characteristic sallow and ashy complexion denotes this. The blood becomes contaminated by faecal fluids absorbed into its stream. The tone of the general system is reduced, the functional activity of the organs which control that metabolism which is essential to healthy cell life is impaired. From the same cause the nervous system is compelled to depend upon an impure blood-supply for its nutrition, and as the secreting power of every gland and mem-

brane receives its energy from this source, not only are its own individual necessities unsatisfactorily complied with, but the health of its cellular structure gradually but surely undermined. In this handicapped condition they are subjected to further ill usage. If in addition to this autotoxaemia the nervous system is subjected to severe strain, dependent upon the anxieties and responsibilities of business life or worry of any kind, how much greater must be the pernicious effect upon the general health, which in truth means that every structure of the body is individually and collectively reduced below par.

In the case of the stomach frequently no consideration is given to its enfeebled condition which is due to these causes, but it is loaded with food and alcohol, which it is quite unable to digest in a satisfactory manner. The result is that fermentation, in place of digestion, is set up, an acrid acid and carbonic acid gas being the direct chemical products. The former acts as an irritant to the mucous membrane, which, if perpetuated, leads to serious mischief, and the latter distends the organ, interfering most seriously with its peristaltic action. The circulation is impeded in consequence of the dis-

tended stomach pressing upon the heart, and the diaphragm, being displaced upwards, prevents the full expansion of the lungs. These symptoms, while being depressing of themselves, produce a more remote but no less injurious effect by the reflex injury they convey to other organs.

Now, it will not be difficult to comprehend that if the mucous membrane of the stomach is kept in a continuous state of irritation for a lengthened period, and this while its vitality is continuously being reduced, by extraneous causes, below the normal standard, it will in the process of time become prone, upon further provocation, to become the nidus of organic disease. We cannot be surprised, therefore, if cell metamorphosis is then provoked, and malignant disease result. Before this extremity, however, has been reached, no lack of warning will have been given, and abundance of opportunities afforded to rectify the errors that have been perpetrated. I cannot repeat too often that cancer is invariably the penalty of an obstinate and persistent infringement of physiological and hygienic law. It is a disease born of rebellion against those fundamental principles which Nature has laid down for our

guidance, and if we analyze each individual case we shall ascertain the truth of this statement.

## CHAPTER XVIII

### THEORIES AS TO THE CAUSE OF CANCER

OF late it must have struck everyone who was interested in the subject of cancer that a variety of theories bearing upon its causation have risen and set upon our mental horizon. Many of these, though possibly containing elements of truth, yet possess little to commend them as being worthy of acceptance. The late Sir William Banks of Liverpool suggested as the cause of cancer the great increase in the consumption of animal food, and he had good reason for making this statement, for since he published his views on this subject some twenty years ago the consumption of butcher's meat has increased enormously and so has the prevalence of cancer.

The greatest meat-eaters in the world are the people of America, whose annual average consumption is 175 pounds per annum; the English come next with an average of a little over 110 pounds; the French eat only half as much meat

as the English, and the people of Germany, Austria, and Italy still less. Now, it will be interesting to ascertain the proportion of cancer to the meat consumed in these various countries; but, so far as I can discover, the death-rate from cancer varies very little indeed in these nations. That excessive indulgence in animal food is a predisposing cause to this and other diseases is not to be doubted. The reason, however, of the deterioration of health, which must necessarily constitute a predisposing cause to disease, will inevitably be found in over-indulgence of any kind. Especially when this is associated with sedentary habits, indigestion and mal-assimilation are certain to ensue, and a vitiated condition of the blood results as an unavoidable sequence. No one will deny the fact that the working classes of the present day consume a much larger portion of animal food than was the case fifty years ago, this being largely due to the fact that they are more prosperous, and that butcher's meat can be obtained at a much more reasonable price, in consequence of the large importation of foreign meat into Great Britain. And it is *pari passu* that cancer has increased in this class, while in the upper classes owing to mental strain due to the increasing

worry and anxiety regarding business, by which the bodily vigour must seriously be reduced, cancer has become much more prevalent; and this notwithstanding the fact that they positively live more plainly and drink less than those who were in the same social position fifty years ago. The consumption of food two or three decades ago was something appalling, the excessive eating and drinking being followed by attacks of gout and other disorders of the blood, which must have tended largely to the development of malignant disease. That cancer is influenced by diet seems to me beyond doubt; and I venture to affirm that overfeeding and indulgence in an unnatural diet have much to answer for in this respect.

Another theory as to the causation of cancer has been advanced by Dr. James Braithwaite; he embodied it in a paper read before the Leeds and West Riding Medico-Chirurgical Society, an epitome of which I take the liberty of extracting from the "British Medical Journal" of 20 September 1902.

His theory is that excess of salt is one of the four factors which originate the disease. He holds that it is the essential one, but inoperative without at least one, and generally two, of the



others, but all four may be present. If only two are present, they must be salt plus a strong local irritant. Dr. Braithwaite thinks that excess of salt with one or two of the other factors must continue for a considerable length of time, and that then some local exciting cause—perhaps too insignificant to be noticed—may start a modification of the formative process in one or more cells, and the disease is begun. Provided that the other factors are acting strongly, the excess of salt may be but small. These other factors are excessive feeding (particularly upon meat), senility or effeteness of the cells, and local irritation. As to the mode of action of the salt, Dr. Braithwaite holds that, while not strictly speaking a cell food, it is a powerful stimulant to cell metabolism. The facts which first directed his attention to the subject were three in number. He noticed that in his practice Jewesses were almost exempt from cancer of the uterus, which exemption, it occurred to him, might be due to the avoidance of bacon by the race; in the second place, the absence of hydrochloric acid in the vomit of cases of cancer of the stomach seemed to point to some connection between salt (from which the acid is formed) and the disease. Lastly, it has been shown that while

in most forms of anaemia there is a reduction in the amount of phosphorus in the blood, in that due to cancer there is a relative increase in the amount of chlorine.

The author contends that salt is the only article of food common to all cases of cancer, and is necessary to the genesis of disease by overstimulating cells already prone to illness. He proceeds to test the agreement of his theory with well-established facts relating to cancer. He finds that it agrees completely with the concomitant increase of overfeeding, especially upon meat, and cancer. That the meat diet without salt is not the cause is, he considers, shown by the fact that carnivora and savages do not get cancer; he states, moreover, that the pig is the only domestic animal to which salt is not given, and the only one free from cancer. The law "No salt, no cancer" does not apply to sarcoma. Dr. Braithwaite finds that the difference in cancer mortality according to occupation is accounted for by this theory and by no other, such as that of micro-organisms. The brunt of the mortality falls upon those who are well-to-do, who live well, eat much meat, and hence much salt. With regard to the "cancer fields" mapped out by Mr. Haviland, the author thinks that the question is one rather

of dietary than geology. Thus, in the Pickering district, which he has himself visited, he has come to the conclusion that the disease is due not to subsoil water and flooding of the land, but to the diet of the people, of which the staple is bacon; in addition, many of them eat meat three times a day. In Wales, again, poor diet, with scanty meat, coexists with a low mortality from cancer. Numerous instances are quoted to show how prosperity increases the mortality from cancer, and prosperity connotes a greater consumption of salt. The district in London which has a cancer average below that of the rest of England is the poorest and dampest of all, embracing the Isle of Dogs, Poplar, Bromley, Bow, Old Ford, Bethnal Green, Bermondsey, and Rotherhithe. Dr. Braithwaite holds that this is explicable on his salt and diet theory; the poorer class cannot afford to eat much meat, and, of course, take less salt. Cancer houses, in his opinion, are those in which there is accommodation to keep a pig, and where, a butcher's shop not being easily accessible, the inhabitants frequently dine on bacon in addition to taking it for breakfast, or where, fresh meat being easily procurable, and the people being able to afford it, they eat it, and, of course, salt with

it, too frequently in proportion to the work they do.

The author states that his theory explains the fact that the great recent increase in cancer is chiefly among men, and is in the stomach and abdominal organs; he considers that it is not opposed to the idea that a micro-organism may be the exciting cause of cancer, though, of course, none would be actually specific. He says, moreover, that cancer, which is unknown among wild animals, has been described in those kept in captivity, and consequently receiving salt. He finds that the cancer statistics of the Jeypore Hospital show a greater incidence of the disease amongst meat-eaters. Coming to the practical application of his views, he holds that as little salt as possible should be consumed by those who wish to ward off cancer. Those who eat meat three times a day should lead an open-air life, and take no more salt than do carnivorous animals; on the other hand, a man who eats salt in abundance will come to no harm if he eats meat sparingly, and lives as much as possible out of doors; in either case sources of local irritation should be most carefully avoided. Dr. Braithwaite has but little hope that abstention from salt will check the course of cancer in a

patient already afflicted by it. But in one case complete avoidance of salt appeared to exercise a beneficial influence upon cancer of the mamma. He suggests that the Jewish fast-days may be an element in restraining the ravages of the affection among this people. If any medicine is given in cancer it should be phosphorus, with a view to increasing the relative proportion of phosphates to chlorides in the blood.

It will be observed that Dr. Braithwaite's theory does not coincide in any important particular with that of Sir William Banks. There is no doubt, however, that salt in excess acts as an irritant to the stomach, and, as we are aware, salt meat was at one time an important factor in the production of scurvy amongst sailors, though the absence of vegetable food was of still greater importance. Notwithstanding the fact that fifty years ago the only animal food which sailors could possibly have was preserved in salt, statistics do not show that cancer was more prevalent then amongst sailors than it is at the present day. We know, however, that salted meat without vegetables had a prejudicial effect upon the skin, which, however, was not malignant. It has long been a popular error that Jews are more exempt from cancer

than other nations. This, however, only relates to cancer of the penis. Moreover, this applies to other Eastern nations where the religious rite of circumcision makes this operation imperative. In other respects statistics go to show that cancer is quite as common amongst the Jews as amongst other nations.<sup>1</sup> Can Dr. Braithwaite be certain that other preservatives besides salt do not conspire to give rise to the changes which he attributes entirely to salt? for we are fully aware that salt at the present time is not employed so largely as a preservative of animal food as it was some years ago. Dr. Braithwaite goes on to say that the pig is the only domestic animal to which salt is not given, and the only one free from cancer; but we must bear in mind that a growing animal is in no circumstances liable to cancer, and the poor pig rarely is permitted to arrive at a mature age, for obvious reasons. What about the horse, which we know is very partial to salt? And what has Dr. Braithwaite to say to the following: "Experiments on the value of salt in the food of sheep have been made in France. Of three lots of sheep one had no salt, a second had  $\frac{1}{2}$  ounce daily, a third had  $\frac{3}{4}$  ounce. The sheep taking

<sup>1</sup> See pp. 132-136.



salt gained more flesh and had better wool than those without it. The sheep getting  $\frac{1}{2}$  ounce did better than those getting more."

With regard to his reference to the Pickering district, where the diet of the people seems to be composed for the most part of animal food, the chief portion of which is bacon, we can hardly look upon this as conclusive evidence that the disease is due to the presence of salt; it is more probable that the food is unsuitable to the requirements of the human being, and therefore the nutrition of the various structures of the body must be seriously interfered with, and thus rendered prone to disease. What the human frame requires to sustain it in perfect health is a varied diet, cleanliness, plenty of exercise, and careful attention to the functional activity of the excretory organs. The tendency of everyone is to eat too much, and, in a great number, to drink more alcohol than is good for them. Indeed, there is a great deal more mischief produced by over-eating than there is by eating too little. In many districts in England farm-labourers rarely have the opportunity of eating any animal food except bacon, and this often of the saltiest description; and yet statistics do not go to prove that cancer is in

consequence more prevalent amongst this class of the population.

I trust that the criticism which I have ventured to make on Dr. Braithwaite's views will not be misconstrued, for it is impossible to study his paper without appreciating to the full all he says in support of his theory; and his arguments certainly go to prove that errors of diet have a considerable influence, by the serious results they produce, in predisposing to cancer, amongst other diseases.

## CHAPTER XIX

THEORIES AS TO THE CAUSE OF CANCER (*continued*)

THE "Medical and Surgical Review of Reviews" contains a notice, of which the following is a copy: "Dr. Bra, of Paris, like Mr. Plimmer, the pathologist to St. Mary's Hospital, has been investigating the etiology of cancer, and claims to have succeeded in isolating a parasitic protozoa, which he describes as the specific cause of the disease. M. Fabre-Domergue, the greatest authority on cancer in France, appointed by the Société de Biologie to examine Bra's

cultures, Dr. Roux, President of the Pasteur Institute, and other bacteriologists, are, however, somewhat sceptical as to Dr. Bra's alleged discovery. M. Fabre-Domergue has reported that the fungoid found in Bra's cultivations was of a secondary and inferior order<sup>1</sup> and that no trace of this parasite could be found in the cancer preparations he examined. Granting that the bacillus of cancer has been discovered, it does not necessarily follow that an effectual serum treatment will be found. The bacillus of tuberculosis was discovered nine years ago, but bacteriologists are still searching for the desired serum. As a matter of fact, all that Dr. Bra claims to have succeeded in doing is to isolate and cultivate a parasite from cancerous growths, and with cultures thereof to produce cancer in animals. Whether Mr. Plimmer or Dr. Bra has succeeded in isolating the specific parasite of cancer, the discovery, assuming it has been made, is only an assumption, and nothing more.

"Cancerous growths are not, however, exactly analogous with the diseases of proved microbic origin. Cancer is essentially a perverted tissue development, dependent largely upon malnutri-

<sup>1</sup> They are, I am convinced, the offspring rather than the cause of the disease.—R. B.

tion. When once started, the process is progressive, invasive, and mainly distinctive by displacing and feeding upon adjoining structures. It is therefore difficult to understand how any purely microbic influence can govern and account for such vital processes. With diseases of microbic origin, changes are always in the direction of destruction rather than of growth, and if cancer is due to a parasite a new law will have to be formulated for this infectious organism in order to explain the immunity from cancer common to early life, when attacks from all other micro-organisms are most common. Indeed, it is claimed by the majority of bacteriologists that it is impossible to propagate cancer from one person to another by contact or inoculation. So far as our knowledge of the subject goes, medical history has not, as yet, recorded a single authenticated exception to this generally accepted rule. The successful cultivation of so-called cancer in the lower animals by means of the newly discovered parasite is certainly very remarkable. Absolute scientific proof of this possibility opens up an entirely new field of inquiry. If the parasitic origin of cancer can be proved, it is by no means improbable that a remedy will be found as effica-

cious in preventing and curing the disease as quinine is in intermittent fever, or vaccine in small-pox. If Mr. Plimmer and Dr. Bra have solved the mystery which has so long obscured the study of cancerous growths, we may, indeed, hope that ere long the disease will cease to be a source of despair for its victims and the profession. Of all the brilliant possibilities of the healing art, none could exceed in importance the discovery of a cure for cancer."

My investigations on the subject, which have now extended over several years, make it quite impossible for me to admit that the views of these gentlemen are based upon a correct hypothesis. I quite agree with M. Fabre-Domergue that the fungoid found in Bra's cultivations might be, and probably was, of a secondary and inferior order. I cannot bring my mind for a moment to consider that there is such a thing as a bacillus of cancer, nor do I consider—as will be inferred from my previous statements—that the disease is due to a specific parasite. The objections, however, to the theories propounded by Dr. Bra and Mr. Plimmer, are so conclusively refuted in the paper which I have quoted, that it is needless for me to go further into the subject.

Dr. Brand has said that his reading and observations had forced him to the belief that the cause of cancer came from without the organism, and that the infection theory was an excellent working hypothesis, and the only one which met the case. From this point of view, "it would explain everything in connection with cancer: its origin, its growth, its undue and ever-extending increase, and its behaviour generally." Now, I hold it is only because men like Dr. Brand have adhered so tenaciously to this belief that so little progress has been made in elucidating the real cause of this disease. As Dr. Williams has so aptly put it, "the profession is so smitten with microbic fever that it will pay no attention to anything else." How is it possible to accept the infection theory when there is not the slightest evidence to show that there is such a thing as a micro-organism connected with the development of cancer, nor yet the merest modicum of proof to demonstrate that it is an infectious disease? No doubt many microscopists have reported the presence of microbes in cancerous tumours, believing them to be the active agents—nay, more, the origin—whereas they are in all probability—I will not assert they are undoubtedly, though I am



thoroughly convinced they are—concomitants rather than active agents. No doubt others have shared the belief which Dr. Brand indulges in—viz., that cancer is an infectious disease. This idea, however, has only existed in a shadowy form; it has not hitherto been proved to be a fact.

Dr. Brand, while hugging the hypothesis of the infection theory, confesses that in the absence of a demonstrative microbe evidence for the exogenesis of cancer must be circumstantial; yet he insists that “the great central fundamental, and most conclusive argument in favour of this hypothesis, was the incontrovertible fact that cancer once developed spread locally by infecting its immediate environment, and that it was disseminated metastatically by the blood current and lymph streams.” Dr. Brand then remarks that “another very suggestive fact is that cancer at the outset, being an epithelial local disease, becomes eventually a constitutional one, the indication being the gradual establishment of ‘a so-called cachexia.’” This term “cachexia,” he imagined, simply meant that the victim of cancer had become saturated with the “toxin” of the “bacteria,” causing disease.

Now, he must have overlooked the possibility of the cancer cell gaining access to the blood and acting upon its constituents, just as it had done prior to this, while it was "spreading locally by infecting its immediate environment"; also that metastasis in cancer proceeds generally in a direct line of the lymphatics, through which pathogenic as well as pathological cells are quite capable of passing. I can further affirm that the very condition of the blood which I believe to be essential to the development of cancer produces a most pernicious effect upon both the red and white corpuscles, and that thus the presence of cancer gives rise to cachexia.

Is it not a strange coincidence that if cancer be due to infection it should almost invariably be unilateral in its attack, while other infectious diseases are bilateral, and not only bilateral, but frequently symmetrical as well? I don't see, therefore, how it can be possibly looked upon as an infectious disease, or even as a disease generated by the admission of a germ from without. Besides, the structure of the various forms of cancer constantly militates against any such view, seeing that it invariably presents the appearance of being composed of perverted normal cells.

Dr. Brand affords ample evidence in support of my contention that "the development of cancer is largely, if not altogether, influenced by the presence of toxic material in the blood" when he states that "we find the higher death-rate from cancer in districts which lie low and are liable to seasonal floodings, and characterized by alluvial and subsoils of the various clays. The favourite districts of the North and East Ridings of Yorkshire lie principally along the banks of the Ouse, the Derwent, and the Humber. I believe that Derwent region is locally called the Cancer Valley. On the other hand, cancer is less prevalent in elevated districts where there is a good fall for drainage, freedom from floods, and characterized by porous subsoil; thus we find cancer most rampant where sewage is most difficult to get rid of, and where it is most likely to be deposited and remain after floodings or high tides on non-porous soil. This permits of, and fosters, the prolific growth of micro-organisms; and the frequent occurrence of shallow surface wells in such districts suggests the easy and extensive contamination of drinking water. It is not difficult, therefore, to realize how cancer could be spread in such localities, and the frequency of

its occurrence in the alimentary system favours this view."

I would venture to inquire: Does it not also favour the view that the blood becomes contaminated, giving rise to the very condition of things which is conducive to the development and production of autotoxaemia, therefore favouring in every particular the development of the rheumatic diathesis? In short, every environment and mode of living which is looked upon as conducive to the development of cancer invariably favours that of gout and rheumatism, which everyone recognizes as being due to that condition of the blood which, I hold, favours the genesis of cancer.

## CHAPTER XX

### PREVALENCE AND DISTRIBUTION OF CANCER

A POPULAR belief has been for long prevalent that cancer occurs rarely among Jews. This, however, seems to be quite an erroneous impression, which has, without exact knowledge, become general. It has, I think, taken origin from the fact that in the poorest parts of Lon-

don and our great towns, which are inhabited largely by Jewish people, the cancer mortality is always very much below the average. This fact tends to favour the opinion that the condition of the blood, which permits the development of cancer, is due to a great extent to over-feeding. In consequence of this, the stomach and excretory organs are overtaxed to an extent which is quite incompatible with the proper performance of their functions. It naturally follows that toxic matter accumulates within the blood, and undergoes decomposition in the manner I have pointed out. If we analyze the facts, we shall find that the Jewish cancer mortality has nothing to do with the race or racial customs, but that it varies according to the conditions of existence and mode of life in different localities and countries, just as it does in other nationalities. The cancer mortality of well-to-do Jewish people living in London in similar conditions to those of ordinary well-to-do English people will probably be double that of the poorer classes living in the East End of London. The late Sir B. W. Richardson, who had considerable experience amongst the wealthy Jews of London, found that they were just as prone to cancer as other people moving in the same class of

society. Moreover, the mortality of cancer among Jews varies according to their surrounding conditions. For instance, in the United States their cancer mortality corresponds with that of the American people in general, and is much lower than it is in European countries like France and Great Britain. Statistics show that the Jewish cancer mortality in the United States is almost the same as for the white population, the proportion being for Jewish males 13.58 per thousand deaths, and amongst the white population 13.09; whilst the proportion in females in the former is 21.65 per thousand deaths, and amongst the United States white people 23.59 per thousand deaths. In an interesting article on the subject in the "British Medical Journal" a correspondent states that "mammary scirrhus has been very often met with, and while examples of nearly every form of cancer have been seen, there has seemed to be a special tendency to the development of intestinal malignant growths amongst the Jews. Of patients dying between forty and sixty-five years of age, a very large percentage have suffered from cancer, while it is sad to remember how many Jewish friends and relatives have succumbed to the same fell malady. There is undoubtedly an



impression in the minds of the members of the Jewish community that, far from being exempt, the Jews are especially prone to suffer from malignant growths, and I must admit that I have been somewhat inclined to share this view, although it has sometimes appeared to be more prevalent among them than it was in my earlier experience."

In contrasting the percentage of deaths from cancer among the Jews with that amongst the other inhabitants of London, we shall find that among the former in the year 1900 the proportion of deaths from cancer to deaths from other causes in persons over twenty years of age was 6.1 per cent., whilst the proportion of deaths from cancer during the same period throughout London was 8.4 per cent. This at first sight appears to point to an immense discrepancy, but the correspondent referred to seems to think that there must be some fallacy underlying this. He has been inquiring of one of the honorary officers of the United Synagogue, and he found that more than half the statements as to causes of death are made verbally, and not accompanied by the medical certificate. Even allowing for a large margin of error from this cause, he thinks it is difficult to doubt that the proportion of

deaths from cancer is less among the Jews than among the general population, yet the evidence seems conclusively to point to the fact that in the lower classes, both of the Jews and other inhabitants, it is lower than in the more well-to-do classes, and as the Jewish population as a whole is composed of the poorer class, the lower death-rate is more apparent than real. Dr. Rodger Williams, in connection with this subject, says "it cannot be too strongly insisted upon that the points of existence really determine the incidence of cancer mortality," and he has adduced evidence to prove this. He then adds that at the present time "the profession is so smitten with microbic fever that it will pay no attention to anything else."

Amongst other nations the idea seems to be prevalent that cancer is really on the increase, and in Italy, where meat-eating is upon a very limited scale, we find that between the years 1887 and 1899, while other diseases tended to diminish, the prevalence of cancer was ever increasing.

In Italy, during the period in question, the deaths from cancer showed a large increase; so that the total mortality from that cause, which in 1887 was 12,631, had in 1899 risen

to 16,680. Of this number the minority were due to cancer of the stomach and oesophagus. Then followed, in order, the liver, spleen, pancreas, and intestine. Cancer of the breast caused 96 deaths, of the female genitals 2,578, and of the male organs 213 deaths.

As in Great Britain, analysis of the figures tends to show that, of all organs, the uterus is the one most liable to the disease. In regard to sex, of the total number who died 6,980 were males and 9,700 females. Up to the age of sixty the female death-rate was very much in excess of that in the male sex. From sixty upwards there was very little difference between the two sexes.

The difference between the mortality of Ravenna, where the proportion of deaths to every thousand of the population was 120.4 on the one hand, and Cheti, situated in the heart of the Apennines and having a mountain population, where the cancer mortality was 26 per hundred thousand, is most remarkable, while that of Abruzzi and Sardinia was lower still. Now, Ravenna is a province lying flat over almost the whole of its extent, and therefore peculiarly liable to give rise to the rheumatic diathesis.

On the other hand the statistics from Hamburg are less easy to account for. In 1894, after the cholera epidemic in Hamburg, the town was supplied with water filtered through sand. Previously it had been dependent entirely on unpurified water from the Elbe. The result was not only that the mortality from acute intestinal disorders fell immediately, but that the death-rate from all causes was reduced from 22 or 25 per 1,000, to 17 or 18·9 per 1,000. The increase of the mortality from cancer was quite unaffected by this improved sanitation.

The different districts of Hamburg contrast sharply with one another both as regards the prosperity and standard of comfort of their inhabitants and the density of the population. Dr. Reiche thought it possible that a comparison of the cancer statistics drawn from the different divisions of the town might throw some light on the cause of the increased cancer prevalence. In this he was disappointed.

Between 1893 and 1899, during which period the statistics for the various urban districts have been kept separately, the death-rate for cancer in different parts of the town was remarkably constant, and lay between 8 and 9 per 10,000 inhabitants. This condition was diametrically

opposed to that of phthisis, the death-rate from which varied in different urban districts between 9 and 27 per 10,000 inhabitants, and was clearly dependent chiefly on the average standard of comfort prevailing, and to a less extent on the density of the population. The prevalence of cancer in Hamburg appears from these facts to be entirely independent of the water-supply, density of population, prosperity or poverty, height above sea-level, and the nature of the subsoil of the different localities, as well as their relation to the river Elbe.

From statistics to hand it would appear that the death-rate from cancer in South Australia is gradually increasing. In 1885 the rate per thousand of the population was 0.32, and in 1900 it was 0.59.

Now, this seems to have been quite coincident with the gradual increase of prosperity in that country. Does this not point suggestively to the probability that the habits of the people have also altered during these years, and that they have consequently been in the habit of indulging more freely in the good things of this life than hitherto? This would naturally prove incompatible with the maintenance of the functional activity of the organs of digestion and

excretion, and blood contamination would be the inevitable result.

Everything seems to point to the fact that cancer is essentially a disease of civilization. Its development would seem to be largely due to the fact that civilized nations have departed, to a very serious extent, from the natural mode of life and living which Providence evidently intended us to follow. The correctness of this belief is demonstrated by many further instances.

Dr. Dalgety, writing from a district of India, where he dealt with a population of 12,000 Hindus and 15,000 Mussulmans, states that during five years' experience he met with only eight cases of malignant disease amongst the Hindus, whilst the Mussulmans furnish still fewer, there being only three malignant growths recorded—viz., cancer of the lip, sarcoma of the scalp, and melanotic cancer of the eye. Dr. Dalgety believes that the statistics for the Hindu population are fairly complete, with a possible exception of some concealed cases of uterine disease.

Commenting on the absence of cancer of the breast, he says: "It is a remarkable fact that I have not yet seen a malignant case of the mamma in this country." As the breasts are freely exposed, and other diseases in that re-



gion, such as those connected with lactation or want of cleanliness are frequently met, the presence of cancer would not be likely to escape detection. Speaking of the cases of malignant disease which he mentions, he continues: "It is safe to say that every one of the cases had suffered from malaria, so that the two diseases are not absolutely antagonistic, at any rate." Now, this antagonism of malaria to cancer has been so frequently discussed of late in the medical press that I shall feel compelled to refer to it again.

Professor Madden, of Cairo, writes: "It may be of interest to you, and medical men generally, to learn that the same conditions obtain to a large extent in Egypt as they do in India. I believe I am right in saying that the consensus of opinion among medical men in Egypt is that cancer is never found in male or female amongst the black races of that country. These include the Berberines and the Soudanese, who are all Mussulmans, and live almost entirely upon a vegetable diet. Cancer is fairly common, however, amongst the Arabs and Copts, who form a large bulk of the white population of Egypt, and who, strangely enough, live and eat much more like Europeans." On the other hand, "Captain W. Niblock details all the cases

of carcinoma, sarcoma, and rodent ulcer which have occurred in the Madras General Hospital during the last ten years. The number of cases of cancer alone in natives was 676, and this is sufficient to show that malignant disease is very far from being rare among indigenous races of the tropics. A remarkable fact brought out in these tables is the great frequency of cancer of the cheek. No fewer than one-third of all the cases of sarcoma occupied this situation, while, if cases affecting the cheeks, jaws, and tongue be taken together, they formed about one-half of the total." This is attributed by the author to the common habit among the natives of chewing the betel-nut. On the other hand, epithelioma of the lip is rare in natives, constituting only about one case in fifty, as against one in fourteen in Europeans, due, no doubt, to the former class not smoking pipes. Now, this proclivity to cancer of the cheek in India seems to be the counterpart of that in the lip of Europeans, and is evidently excited by a cause very similar in its nature. It goes to prove that the predisposition to cancer may lie latent for an indefinite period, and the disease be only brought into activity by circumstances which provoke irritation of the part affected.

It is a well-known fact that malignant disease is very common in Bengal, which is one of the most malarious parts of India, and where attacks of this disease have been frequent during the progress of cancer; so, from this fact, it would appear that the former has no effect in retarding the development of the latter.

Taking into consideration the geographical distribution of cancer, it would appear to be chiefly a disease of temperate regions, being non-existent in the extremes of temperature such as exist in Greenland or Iceland and the tropics. Does this imply that the inhabitants of these regions lead more natural lives, and conform more to the actual requirements of the body, than to over-indulgence of their desires? It has been suggested that, although the extremest cold has no destructive effect upon bacteria or other spores, it certainly keeps them dormant, and this would explain the absence of causes of cancer in cold climates. I need hardly add that from my point of view this explanation is very feeble indeed. On the other hand, to account for the alleged infrequency of cancer in the tropics, it has been argued that this is more apparent than real, and may be due to less accurate supervision of disease in these regions.

## CHAPTER XXI

## CANCER HOUSES AND DISTRICTS

OUR attention is daily being directed to the existence of cancer districts, and even of cancer houses. These, however, are invariably found in localities where the conditions and contents of the soil give origin to constant emanations of gases, liberated during the decomposition of organic matter, which, being inhaled by the inhabitants of the district, will slowly but surely undermine the health, and interfere as effectually with healthy cell metabolism as the absorption of entero-toxins will do.

Dr. Mason, of Leamington, in an article in the "British Medical Journal," gives some statistics which are most interesting and striking in their nature. He states that "out of 427 deaths from cancer only in seven times did they occur twice in the same house, but in one of these the patient removed into that house only a few days prior to her death. It is, however, very common to occur in houses in the same row, and on the same side of the street." He then gives a table which

points out the frequency with which two or more houses adjacent to each other are cancer houses, and that there must be some determining cause in common. In the succeeding part of his paper Dr. Mason confesses that the sanitary condition of the houses referred to was in a most unsatisfactory state, and from this fact he seems to conclude that cancer is "due to some germ, whose habitat is a sewage-contaminated sub-soil, and that its entry into the organism is through one of the mucous membranes which line the apertures of the body."

The concluding portion of his paper goes to prove most satisfactorily, to my mind, that insanitary dwellings and an atmosphere loaded with effluvia and unhygienic surroundings all tend to the development of this disease. That they act in the manner which Dr. Mason states does not agree with my reasoning, yet his views go to substantiate what I have already expressed as my opinion—viz., that a contaminated environment invariably results in changes in the blood, which act as most powerful predisposing causes.

The fact of there being in existence such buildings as cancer houses should not, then, I think, lead to the conclusion that the stigma

attached to these is due to a taint that has been left behind by a previous occupant, who may have succumbed to cancer in that particular dwelling. The most rational explanation is that the environment is responsible, because this is made up to a large extent of vitiated air, which we know acts in a highly prejudicial manner upon the quality of the blood stream, conveying to it impurities, which, in the circumstances, can only accumulate and never be got rid of. It therefore naturally follows that this will promote within the blood those conditions which predispose to the development of cancer and other diseases also. Now if any one continues to reside in such an environment, especially if the individual is a subject of chronic constipation (which is highly probable in the circumstances) an impure water supply (also highly probable), and with an unwholesome diet superadded, is it a matter of surprise that the person residing under such unhealthy conditions should prove susceptible to morbid influences of various kinds? In this sentence are included the whole of the conditions which predispose to cancer, and therefore, before suggesting preventive measures, if these are destined to prove efficacious, we must take particular cognizance of



the above important factors which are without exception so intimately connected with the incidence of the disease. The human lungs were never intended to be dependent upon a vitiated air supply, nor is it possible for the blood to be retained in a healthy condition if the atmosphere is not frequently renewed, either in the dwelling, the workshop, the factory, or in places of public resort. It is therefore of the greatest importance that the avoidance of such palpably unhygienic conditions be seriously considered. No one should ever think of lying down to sleep without the bedroom windows being opened both at top and bottom. With some people there is an unwarranted and senseless dread of fresh air, which is only founded upon ignorance; and how they are able to retain even the semblance of health in the circumstances, is, and always has been, a mystery to me. It only proves, however, how elastic the human frame is, and how it is able, apparently, at least for a time, to accommodate itself to conditions which are diametrically opposed to the laws of hygiene. Such a course, however, cannot be persisted in without eventually giving rise to organic changes in one or more of the tissues or organs, which, under these circumstances, frequently

become the seat of disease. Fresh air, then, as will be generally admitted, is an essential condition to the retention of health, and also an important factor in its restoration. Next to this comes, of course, a pure water supply. And finally, special attention must be drawn to the influence of diet, both as a predisposing agent in the development of cancer, and, on the other hand, as an important factor from a therapeutic point of view. For unless this is carefully attended to, all our therapeutic measures will only prove of transitory benefit, if not absolutely futile. To this subject I shall return later.

## CHAPTER XXII

### URIC ACID A PREDISPOSING CAUSE

IN studying what has been written on the pathology of cancer, so great a diversity of opinion is expressed that it is difficult to bring into harmony all that has been submitted to the profession upon this important subject. It stands to reason, however, that before cells depart from their normal, and take on a malignant development, the subjacent tissue must necessarily have

become enfeebled, and this fact would appear to have been recognized by pathologists, who have designated this enfeebled condition of the parts "the pre-cancerous tissue." Why it should receive this designation it is difficult to comprehend, as it is not a *necessity* that cancer should supervene. My reason for taking exception to this nomenclature is that under judicious treatment the unhealthy features may be removed, and malignancy thereby averted. In epithelioma this debility may have acted as a stimulus to the perverted epithelial cells, the alteration in their character being the direct result of the departure from the normal condition of the epithelial layer of mucous membrane, which I have before commented upon.

We are fully aware that when the cell-growth of either the epithelium or endothelium is excited by an irritant, or by enfeeblement of the subjacent membranes, a remarkable proliferation of immature cells is liable to result, which are thrown off in considerable quantity, giving rise to catarrh. If the altered cells, however, are retained in close follicles, or in culs-de-sac having a narrow calibre like those of the utricular glands, it is not difficult to conceive that they may become implanted on the surface

of these glands, and proceed to a further, and even a pernicious, stage of development. They are thus transformed from a benign to a malignant state of existence, when they commence to prey upon their environment. After still further prostrating the already enfeebled tissue, they will thereafter progressively infiltrate it and develop a character of malignancy.

It is a well-recognized fact that malignant disease is essentially one of adult life, although it frequently appears, as has been before observed, in a harmless and curable condition in young persons. I refer once again to the fact that warts, which so frequently occur in young persons, are essentially similar in nature to epithelial cancer. It would appear, therefore, that before malignant disease, except sarcoma, can be recognized as liable to become constitutional, all natural growth of the body must have ceased, and maturity become established. In other words, normal cells do not seem capable of altering their character or relationship to each other until the development of the body as a whole has become complete, nor will they do so even then if the healthy condition of the various organs is maintained. Now, as the health of these organs, and the cells which enter into

their composition, is entirely dependent upon an uncontaminated blood-current, we must look upon some change which has taken place in this fluid as being the chief factor in the production of the condition of affairs which tends to culminate in the production of cancerous affections. In my opinion, this has its chief origin in the alimentary canal, although external influences no doubt play an important part also. But we must remember that these invariably reflect their evil effect, if not directly, at least indirectly, upon the functions of digestion and assimilation. If a person is of sedentary habits, or is living in a vitiated atmosphere, or is the subject of mental strain from whatever cause, or if he is liable to exposure to unhealthy surroundings, his vital energy must suffer *pari passu*, and therefore his nervous apparatus will, *pro rata*, become impoverished, and in consequence his vital tone be reduced. If this is continuous for any length of time, his proneness to disease will thereby become an established fact. The stomach ceases to act in a satisfactory manner; the liver becomes torpid, and with the impairment of the health of these two organs torpidity of the colon almost invariably follows as a natural sequence, or *vice versa*. Chronic

constipation is therefore the inevitable result, and when this becomes established, absorption of foetid matter from this portion of the intestine into the blood invariably follows. Now it goes without saying that, if this is continuous for any length of time, it is impossible for the blood to retain its healthy character. The red corpuscles in the first instance become seriously affected, and in consequence of this a further reaction upon the health is established, the whole organism suffering to a pronounced extent. The process of disease of the red corpuscles does not, however, terminate at this point, but their destruction ultimately takes place, culminating in anaemia, which is of such frequent occurrence in young people. This toxic effect upon the blood is also manifested in the dusky complexions and in the enervation which we so frequently observe in adults who suffer from torpidity of the bowels.<sup>1</sup> It is not difficult to comprehend that, if such a condition of the blood exists for any length of time, still more important changes may be imminent. Furthermore, if the blood be charged with a toxic material, it is impossible that it can perform its functions in a satisfactory manner. If, then, in

<sup>1</sup> See paper by the author ("Lancet").



these circumstances, the opportunity offers, chemical changes will be liable to occur; that is to say, if certain organisms, which otherwise might prove innocuous, are admitted into the blood, these will be afforded the opportunity of exerting a pernicious influence, which will culminate by giving rise to the formation of pathogenic material. In this manner the composition of the blood undergoes serious alteration, and a new character is given to it, just as the *torula cerevisiae* alters the constituent parts of fluids containing saccharine material. It is in a similar manner, I have no hesitation in submitting, that uric acid is produced and the rheumatic diathesis established. What the particular organism is that produces the development of uric acid it is difficult, perhaps, to decide, but my conviction is that it is the presence of *saccharomyces hominis* which, to a considerable extent, is responsible for the production of uric acid.

Now, there is nothing to be said against the possibility of this pathogenic material being frequently present in the blood without producing any mischievous effects; nor do I think they could result if the blood were in an otherwise healthy condition, and the standard of health of the individual satisfactorily maintained. The

condition of things, however, would be completely reversed were the relationships altered. For example, let us suppose that an individual whose blood contains *saccharomyces* is exposed for some time to cold and damp, so that in consequence his vitality becomes reduced to a considerable extent; then, of course, would be the opportunity for the ferment to exert its influence on impurities in the blood at the time, which in the ordinary course of nature would be excreted by the kidneys. In such circumstances, what would naturally have been excreted as urea becomes transformed into uric acid, and, becoming combined with alkaline material, produces urates. These being in superabundance might become deposited in the joints, and thus give rise to rheumatic fever. Again, if, in consequence of continuous absorption of faecal fluids from the colon, the blood has become contaminated by ammoniacal products, and therefore its vitality proportionately reduced, these microzymes may be enabled to decompose this foreign matter, and produce uric acid by a similar process.

We are aware that *saccharomyces hominis* have been observed in subperiosteal inflammation of the tibia, also associated with the exist-

ence of malignant disease. We are also aware that they possess the property of inducing fermentation of grape-sugar, with the generation of alcohol and carbon di-oxide. Is it unreasonable, then, to infer that the presence of these bodies may also be capable of producing the chemical reaction which I have indicated? For the information of my readers who have not studied the question, I may state that the organism appears in the form of round or oval cells with double contour and a capsule.

My friend Dr. Inglis Parsons has pointed out that these organisms are frequently associated with epithelioma; but my impression is that the disease is not directly due to their mere presence, but indirectly to their effect upon the constituents of the blood which I have ventured to suggest they produce. Be that as it may, his views and mine so far coincide, and our views harmonize also to some extent as to the treatment of epithelioma, by administering those remedies which have a destructive effect upon this organism.

My contention, however, goes beyond the bare fact that *saccharomyces* are present, for I hold it is their product—viz., uric acid—which is concerned, and that deeply, in promoting the

condition of the system which enables cancer to assert itself. We must not lose sight of the influence it, as a toxic agent, of necessity exercises upon every organ of the body, and therefore upon the functional activity of the thyroid gland, upon whose integrity, I maintain, the epithelial structure of the various membranes of the body so largely depends. It is on this account that we must concentrate our efforts, not only on preventing the formation of uric acid, but also simultaneously on restoring the functional vigour of this important gland.

It has often been remarked that phagocytosis appears to take no part in any effort which the *vis medicatrix naturae* may exert to overcome cancerous infiltration. The disease seems to progress steadily without any interference whatever on the part of the white corpuscles. So far as my observation has led me to conclude, the same may be said of the inflammation which is characteristic of gout, and also of that in acute rheumatic arthritis. The resolution of these two diseases would seem to proceed without any assistance afforded by the white corpuscles. Is it not, then, natural to infer that, when uric-acidaemia is present, the leucocytes are detrimentally affected, and deprived to a large ex-

tent of the power which they otherwise would possess? There is nothing, I hold, at all unreasonable in such a conjecture, and it appears to me to be the only possible explanation of the fact that these bodies remain inert under the aforesaid circumstances.

## CHAPTER XXIII

### DIAGNOSIS

Now, approaching the subject of diagnosis, one cannot avoid being painfully impressed by the great diversity of opinion which would appear to exist on this point. Numerous instances are on record where eminent pathologists, examining a single specimen, have differed in the conclusions arrived at after careful study. Repeatedly an observer has proclaimed a neoplasm to be malignant, whilst another affirmed that the tumour was benign. One author, in an interesting contribution on "The Nature and Treatment of Malignant Neoplasms," protests against microscopic examination *before* operation, believing that the preliminary cutting of the tumour might cause a rapid change, or an

escape of cells that will infiltrate new tissue, and perhaps be the cause of recurrence. He further insists that microscopic examination should be made *after* removal, and recorded for future guidance. He goes on to remark that, could surgeons see microscopically all the small tumours they have thrown away without examination, there would probably be a vastly greater percentage of malignant growths found among them than is generally supposed, and I am assured this is correct. *Per contra*, I am satisfied that a great many operations—especially upon the uterus—are performed for so-called “malignant disease” when this has no existence; *e.g.*, one writer affirms that, “If the os is discovered to be eroded and redder than normal, with an unhealthy discharge escaping, and if this discharge be wiped away on a pledget of wool, and observed to be purulent in its nature, and if it seem watery and perhaps blood-stained, the case is highly suspicious of cancer.” Further, that if the discharge has a faint disagreeable odour, and further examination with the uterine sound denotes that the canal is increased in length, and the manipulation of the instrument causes bleeding, he says we may be pretty certain that we have to deal



with a cancerous uterus. For the purpose of making the diagnosis clearer, he recommends that the patient should be placed under an anaesthetic, the uterine canal fully dilated, and by means of the curette a scraping of the cavity be obtained for pathological examination. Here, however, he suggests that we may be beset with difficulties, these arising from the fact that a portion of healthy tissue may be removed, when, of course, the pathological report would be fallacious. (I may here state that if my dredge curette were employed in such circumstances no mistake of this nature could possibly arise.) But I maintain that, if the microscopical search be still further proceeded with, even by a thoroughly competent pathologist, or pathologists, difficulties would still crop up to prevent one arriving at a correct conclusion. My reason for making this statement is that, when endometritis has existed for a lengthened period, the endometrium becomes so altered in character (frequently assuming a granular or papillomatous condition) that it gives rise to all the symptoms above enumerated.

Were these symptoms diagnostic of cancer, then I would be in the happy position of having treated, without the least difficulty, innumerable

cases of this dreadful disease with perfect success; and this without having recourse to anything more formidable than the free employment of the curette, followed by a few weeks of intra-uterine medication and constitutional treatment.

There is one symptom, however, that has been mentioned which I look upon as almost pathognomonic of cancer of the uterus, namely, a persistent foetid odour of the muco-purulent, sanguineous, or sanguineo-purulent discharge. Notwithstanding the fact that these symptoms may obtain, and, furthermore, that the patient has become cachectic and lost considerably in flesh, I hold that the disease is still amenable to treatment other than the surgical resort to the serious operation of hysterectomy.

Extensive observations on this subject have taught me that the only form of cancer which takes its origin in the uterus is epithelioma; and although I am in the habit of seeing daily a considerable number of cases of uterine disease, I have never yet come across one instance of malignant adenoma or of scirrhus affecting this organ. Yet it is recorded in the "British Medical Journal" that one operator out of three cases pronounced two of them to be "scirrhus." I can only look upon these as being instances

of error in diagnosis; the probability is that they consisted of fibromatous interstitial nodules, which gave rise to the appearance suggestive of cancer. If scirrhus is ever met with in the uterus, then I would conclude that it has arisen from metastasis, and would therefore not be amenable to operation. I could quite as readily conceive of scirrhus appearing as a primary disease on the tongue, lips, or rectum.

The natural history of epithelioma differs materially from that of scirrhus; the former invariably attacks a tissue which has been debilitated by pre-existing disease, and in its structure is closely allied to the tissue from which it originates. Scirrhus, on the other hand, manifests itself in the majority of instances in tissues where there has been an entire absence of indications which would lead one to prognosticate its advent. Moreover, as I have pointed out, there are sufficient grounds for supposing that scirrhus is the result of a transmigration of a cell or cells foreign to the part which is attacked.

Epithelioma seems to me to be the result in the first instance of a depraved condition of the matrix of the epithelium, the consequence being that perverted instead of normal cells are

generated, their proliferation being increased *pro rata*.

Symptoms somewhat similar are manifested in myxoedema, which is invariably accompanied by metrorrhagia to a greater or less extent. When this disease is treated by means of thyroid gland, the epithelium is restored to health, and as a consequence the haemorrhage ceases.

The relationship which exists between the thyroid body and the genital organs was (according to Catulle's statements) well known to the ancients. It has also been demonstrated that pregnancy, when accompanied by hypertrophy of the thyroid body, sometimes favours the regression of a pre-existing thyroid tumour. Professor Charcot, having seen women affected with exophthalmic goitre cured after pregnancy, did not fail to advise it on therapeutic grounds in the treatment of this painful affection. (My experience, however, is that women suffering from goitre are much less prone to become pregnant than other women.)

The relationship between the thyroid body and the uterus is affirmed in a more decisive manner by certain singular facts observed by MM. Bouilly, Tuffier, Guinard, Picque, and Bloch. These surgeons have had to operate

on patients affected by fibroid tumours of the uterus, or salpingo-oöphoritis, in whom co-existed goitres, some of which had previously resisted all treatment; yet they have seen thyroid tumours disappear, or, at least, be considerably diminished, after the extirpation of the pelvic organs.

## CHAPTER XXIV

### THE EVOLUTION OF THE CANCER CELL

IN normal circumstances the newly-born babe is an uncontaminated, plump, well-nourished, healthy individual. Every cell and every organ of the young body are in perfect order, and only require careful attention and guidance to enable them to continue so. The intestine, though laden with faecal matter, composed of bile and epithelial detritus, is capable of harbouring and nourishing bacterial organisms, yet at birth is absolutely free from these. Within a few hours of birth, however, as Metchnikoff has pointed out, micro-organisms enter the intestine along with the air, and also through the anus. In the course of the day, before the infant has taken any kind of nourishment, the contents of the bowel

will be found to contain several varieties of micro-organisms of the bacterial order. Metchnikoff has demonstrated that under the influence of the mother's milk these micro-organisms undergo a marked reduction, both in variety and number, until eventually they are practically made up of only one species. Who, then, after this can deny that diet does exert a most potent influence upon the intestinal flora, and therefore upon the health of the individual? That such is the case receives further confirmation from the fact that when an infant is fed upon cow's milk, or other artificial diet, these organisms not only appear in greater variety, but are far more numerous than when it is dependent upon the maternal supply. Later on, as the food varies in character, the numbers and variety of the intestinal bacteria become still further augmented. It is quite evident, therefore, that the bacilli, dependent for their growth and proliferation upon one kind of food—mother's milk, for example—exert in some mysterious way a bactericidal effect upon other varieties, thus proving the powerful influence which diet exerts upon the presence of toxins within the alimentary canal, and, therefore, upon the health of the individual. Thus, if we select a diet which promotes the growth of an organism



of a harmless nature, we may succeed in preventing the development of those other organisms which might prove inimical to health. It is evident that milk exerts a most beneficial effect in this direction, but much more so is this result attained when butter-milk, or milk that has been allowed to become sour, enters into the dietary. You may ask, What has all this to do with the evolution of the cancer cell? I reply, It has a great deal to do with it, as I hope to demonstrate later on.

But to return to the new-born babe, which though taking its origin from a single cell, and that of microscopic dimensions, has now become a composite body, made up, as someone has estimated, of 24,000,000,000 cells. Now this is rather a large army to discipline and see that each unit is maintained in an efficient and healthy condition. Yet it is imperative that each unit of the enormous total be healthy and efficient if the healthy condition of the body, which has been inaugurated at birth, is to continue.

For the most part our body is made up of fluid material, and it is upon the physiological changes in the varieties of this fluid, which are constantly taking place, that maintenance or deterioration of health depends. It is hardly

necessary for me to refer to the fact that by far the most important fluid constituent of the body, from which all the other fluids are derived, is the blood. It is, therefore, absolutely essential to the health of every individual cell that the blood be uncontaminated by any form of impurity, whether such impurity be derived from food, water, air, or, what is certainly as important as any of these, the alimentary canal. A merciful Providence has supplied us with an unlimited supply of both pure water and fresh air, and if we take full advantage of these we shall have gone a long way towards the preservation of health. Indeed, I have no hesitation in affirming that many diseases would become non-existent were this course studiously followed. Disease germs are only rendered active and prejudicial to health when found in air and water contaminated by impurities; while the blood becomes unable to afford that resisting power of the cells of the body to disease, which it primarily possesses, when it is impregnated by toxic matter absorbed from the intestinal canal. The importance of pure air is proved by the various diseases contracted in the vitiated atmosphere so prevalent in badly ventilated enclosed spaces, such as railway carriages, public meet-

ing-places, and even more so in our own houses, especially when sewage contamination is co-existent. So far as pure water is concerned, we have only to recall such diseases as typhoid fever, cholera, diphtheria, and many others which directly result from a vitiated water or milk supply. Lastly, we have the various diseased conditions, which, to a large extent, are dependent—in numberless instances—upon the absorption of poisons generated in the intestines, especially when an unsuitable diet has been partaken of and constipation is coexistent. When we consider Metchnikoff's statement that "the bacteria of the human intestine increase at the rate of 128,000,000,000 each day, the greater part being found in the large intestine," can we wonder that, with such a poison factory within him, man's life is prematurely shortened?

Metchnikoff's plan for correcting this appalling state of affairs is by a liberal supply of sour milk, the lactic acid of which is inimical to the growth of putrefactive bacteria. In this connection it must be borne in mind that lactic acid fermentation in milk is due to the presence of a certain bacterium, which, as has been pointed out, though innocuous of itself, has the power of destroying that which is pernicious. Hence

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it would appear to be advisable that sour milk should enter largely into our dietary. Nor must we lose sight of the fact that milk which has not undergone the process of fermentation also contains bacteria which not only are benign in their nature, but have also a destructive effect, though to a more limited extent, upon those which are prejudicial to health. These observations will prove of the utmost value if we will only devote to them careful consideration, "for man at present is out of harmony with his environment, and the customs of civilization have made demands on his animal frame beyond its power of contending with satisfactorily"; the results being that most of the ills to which he is plausibly said to be heir, but which really are the direct consequence of his ignoring the beneficent laws of Nature, continue to hurry him to a premature grave.

It will not be difficult to infer from the remarks that have preceded that healthy cell life is incompatible with an impure blood stream, from whatever source or combination of sources it may be derived. Now, if the various cells and organs of the body are for a lengthened period compelled to derive their nourishment from a vitiated blood supply, no matter what

the pollution consists of, is it reasonable to expect that they will be able to continue in healthy vigour and be competent to carry on their various functions satisfactorily? Need we wonder if their physiological harmony is seriously interfered with, and that a spirit of mutiny should arise—just as in an army, for instance, when the food supply is considered defective—and that if matters are not speedily rectified this mutiny should spread till eventually the whole fabric is overthrown? This condition will naturally be most pronounced in that particular cellular tissue which possesses the most active propensities. Now, perhaps the most active, prolific, and versatile cell of the whole body is the epithelial cell, and it is to this, essentially, we must confine our attention in its relationship to cancer, as it is to a morbid metabolism of this cell that cancer is mainly due. The epithelial cell is possessed of enormous powers of reproduction, evidenced by the constant shedding and renewal of the epithelial layer of the skin and mucous membranes, while its activity is illustrated by the rapidity with which this process can be effected. Its versatility is demonstrated by the fact that although on the one hand we are dependent upon it for the dense

covering of the whole body, which, though sensitive, through its nervous supply, to the slightest touch, yet affords sufficient protection to the hypersensitive soft tissue which lies immediately underneath; on the other hand, it constitutes the covering of the various mucous membranes, providing them with a power of secretion, not only of mucus to keep them moist, but also, in the air passages, with that antiseptic substance named mucin, which possesses such a potent effect upon any disease germs which may find access to the respiratory apparatus. In these positions the layer of epithelial cells is more or less opaque, but in the eye we find it is not only protective but absolutely translucent. In one respect, however, it is always uniform—that is, in its power of proliferation.

If the blood be kept in a healthy condition, barring accident, the epithelial tissue will, by virtue of the suitability of the pabulum it relies upon for its nutrition, and the nervous stimulus which is also essential to its well-being, continue in its healthy vital vigour, and perform its various functions in every respect satisfactorily. In order that this end may be attained, the strictest attention must necessarily be paid both to dietetic



and hygienic laws, and I need hardly add that, if this attention is given—which is not a difficult matter—the reward will amply repay the effort put forth.

Let us now consider the various effects of a contaminated blood stream upon the epithelial cell, the culminating point of the pollution resulting in cancer. In the first place, we must bear in mind that this cell is a highly complex entity, of wonderful architectural structure. In its normal condition it is enabled to furnish a complete armour capable of resisting the entrance of any object between its minute plates, the density of its surface being quite sufficient protection against the assaults of certain micro-organisms constantly present in the atmosphere which, when the health of the cell has suffered from any cause, frequently succeed in obtaining a footing. We are all well aware of the fact that when one's health is below par, whether due to overwork or any other cause, the resisting power to disease is decreased, and Nature calls attention to this fact in various ways. Now, as health cannot suffer without every cell of the body being injuriously affected and its vitality lowered, we frequently find that the first note of warning Nature sounds to call

attention to the fact consists in a loss of functional activity of the skin or mucous membranes which have suffered, either from impurities within the blood, the accumulation of which they have been unable to cope with, or from an enfeebled nervous stimulus which may arise from the same cause, or from a combination of the two. As a consequence, the epithelial cells covering these surfaces cease to mature properly, the result being an appreciable loss of density and compactness. This we see forcibly exemplified in that condition of the skin which favours the development of boils. These distressing affections are caused by the entrance of a certain microbe which, in the circumstances I have indicated, is enabled to penetrate the surface by way of the minute orifices through which the hairs emerge. Once it has gained admission the microbe becomes the parent of a colony, which sets up that intense irritation of the part and subsequent suppuration, a furuncle or boil. If means are not now adopted to restore the general health, and if friction be not avoided, the boil may proceed to a carbuncle. I would here like to add that one boil is frequently succeeded by a crop of this painful eruption in consequence of the

practice of treating them by poulticing, which not only soddens the skin, thereby rendering it more prone to infection, but also promotes the development of the invading organism.

An enfeebled state of health, as I have stated, is due to a loss of vital energy, which is reflected upon every cell of the body, and in its early stages is accompanied by a feeling of discomfort and oppression. If Nature's warning is left unheeded, other symptoms of graver import may speedily follow. This morbid condition may be due to many causes, such as mental strain, which invariably has a depressing effect upon the digestive organs as well as upon those of secretion and excretion. The body, therefore, ceases to be properly nourished, and the blood becomes loaded with the products of decomposition which are constantly being generated by the physiological changes continuously taking place in the various tissues of the body. The vitiated condition of the blood stream which naturally ensues, charged as it is with this toxic material, may produce such a debilitating effect upon the epithelial cells as to render them incapable of arriving at maturity; with the result that, instead of acquiring that horny character which fortifies them against

the attack of external morbid influences, they succumb to their invasion, erosion of the surface of the skin being the result. In this way do we account for eczema and the intense irritation produced by it. On the other hand, certain impurities in the blood would seem to excite an undue proliferation of the epithelial cells forming the cuticle, giving rise to certain squamous diseases of the skin, of which psoriasis is a good example.

Errors in diet will also exercise an important influence upon healthy cell metabolism, and, therefore, upon the integrity of the skin, mucous membranes and other tissues.

This is well exemplified in that bane of the sailor's life in years gone by. I refer to scurvy—a disease of the skin and mucous membranes, which not infrequently proved fatal—and scurvy was mainly due to the exclusion of vegetable matter from the dietary, thus proving how largely cell metabolism is dependent upon the vegetable kingdom for its healthy performance. No doubt the unwholesomeness of salt meat exerted an important influence also, but this only goes to demonstrate more forcibly the effect of diet upon healthy cell life. Eventually it was discovered that lime and lemon juice

acted beneficially both as a prophylactic and also as a curative agent in scurvy, thus placing beyond doubt the fact that the human body relies to a very considerable extent upon a fruitarian and vegetable diet, especially in an uncooked condition.

Now the health of the body is, as I have stated, dependent upon the health of the cells of which it is composed. These cells, therefore, must be nourished in such a manner as will promote to the utmost their vital energy, and not only enable them to resist the invasion of disease germs, with which the human organism is perpetually struggling, but also assist them to retain their harmonious relationship with each other. An enfeebled system is incapable of withstanding infectious disorders. Robust health is the best safeguard against disease, and this condition depends entirely upon the healthy vigour of the cells. The cells, therefore, must be our prime consideration, and must be fortified in every conceivable manner. Medicine, however, will not do this. No; we must not only study, but really conform to, those laws of hygiene and dietetics which Nature has instituted for our guidance.

The cancer cell would never come into exist-

ence at all did we obey these laws. It is important to bear in mind that, so far as our present knowledge teaches us, cancer has not an infectious or contagious origin; scientific investigation has, I think, placed this beyond all doubt. The cancer cell is primarily a normal cell that has rebelled against the persistent ill usage it has been subjected to. In consequence of this it has gradually parted with its loyalty to those physiological laws which hitherto have regulated its cycle of life. We know it of old as an active, prolific, versatile, and adaptable cell. It can be successfully transplanted from one individual to another, and it is even capable of taking up a novel position, and carrying on its existence within a muscle, for example, when it has been carried into such a structure through a wound. Is it to be wondered at, then, that, as we know to our cost, a cell may, and does frequently throw off its allegiance to those laws which govern healthy cell metabolism, take up a new *rôle* of existence and adopt cannibal proclivities, which it does when it develops into a cancer cell? It then ceases to depend entirely upon its normal source of nourishment, but attacks and preys upon its neighbours, invading their domain and over-



running it with malignant hosts. Eventually, if not arrested, it penetrates the lymphatic vessels, and thus reaches the neighbouring glands, setting up a new colony of cancer cells there, some of which make fresh inroads into more distant tissues. Not infrequently it may eat its way into a blood-vessel, and thus be conveyed to distant organs, there to set up another focus of disease, and so on, until the poor victim, worn out and wasted to a shadow, falls into a premature grave. This is a dark picture to present to your view; but, fortunately, it need never be painted now. Even if it has been commenced, it may be rubbed off the canvas, if only common sense be carefully exercised.

From the foregoing remarks it will be perceived that the conclusion I have arrived at is that the cancer cell owes its origin, and that in a direct line, to a normal cell, which has undergone a morbid metamorphosis consequent upon protracted malnutrition.

We know that certain results upon animal life can be, and not infrequently are, produced when a certain object is aimed at. Take, for example, the evolution of the queen bee, which is entirely due to the kind of nourishment supplied to it. Moreover, there is fairly conclusive

evidence that every variety of plant owes its power of procreation to the fact that its progenitor has conveyed to the seed the power to select from its environment that form of nourishment, and no other, which conduces to the development of the peculiar form and characteristics of its ancestor. That these can be improved upon by careful cultivation is apparent on every hand, while neglect will have an opposite effect. The lack of attention, therefore, to those laws which regulate healthy cell life cannot but result most disastrously, sooner or later, and it is only because Nature is so forbearing that it is not invariably sooner *than* later that she rebels.

On the other hand, it is maintained by certain writers on the subject that the source of cancer is an embryonic cell which hitherto has remained in a latent condition. How, then, are we to account for the fact that cancer is a curable disease when healthy cell metabolism is restored? Or is the hypothesis based on the fact that, in the condition of the blood which promotes the development of cancer, there is, not infrequently, a tendency for the mature cell to revert to its embryonic condition? This, I do not deny, may appear as a concomitant in the

morbid metamorphosis, but that it is primarily the progenitor of the active cancer cell I cannot believe, or how could the latter come into existence under other conditions? It may be, however, that those who advanced this theory have been unaware of the fact that in circumstances which prove unfavourable to healthy metabolism there is established a tendency for certain cells to assume the embryonic form, while others arrogate to themselves an aggressive order of conduct. This is the only way in which I am able to account for the presence of embryonic cells in cancer tissue in the few instances in which they have been recognized.

There is one point in this connection which is much more important than the presence of embryonic cells, even if cells, resembling or representing these, are occasionally found in relationship to cancer; this is, that cancer, occurring *primarily* in a certain tissue, never parts from its original cell structure. That is to say, when a cancer cell is transported, by whatever channel this may have been accomplished, from its original seat, it does not convey its malignancy to its new environment, but establishes *itself*, and subsequently *its* progeny *upon* the tissue it has invaded, destroying and feeding upon it and

making it the vehicle by which it is still further enabled to extend its ravages.

It will thus be perceived that the fact of a cell becoming malignant does not deprive it of its versatile and active propensities, nor of its universal adaptability to altered circumstances, thus proving that it is no new creation, but simply a cell gone wrong, and this on account of injury inflicted upon it.

## CHAPTER XXV

### NUCLEIN

ONE notable characteristic of animal life is the constantly pervading cycle of growth and death of the cells, followed by the removal of the dead cells, these being replaced by others of a like nature, and fulfilling the same functions. This we call metabolism. To enable this process to be continuous, a suitable nourishment must be at the disposal of the cell, and not only this, but an efficient nerve stimulus must also be simultaneously supplied. Wholesome food, in fact, is a *sine qua non*. The food is taken into the stomach in a fluid or semi-fluid form, or, at any

rate, this should be its condition before it enters the stomach, and this will be its condition if complete mastication is enforced. In the stomach and duodenum the food undergoes a process of decomposition, which we term digestion, after which what is superfluous or useless passes through the intestines, while that which is to be applied to the nourishment of the body is taken up by the lacteal vessels and transformed into blood. Then, by a wonderful network of tubes and tubules, said to extend to 2,000 miles in length, the vivifying fluid is distributed to every part of the body, supplying nourishment and repair to muscle, bone, integuments, nails, hair, the internal organs, and last, but by no means least, to that marvellous and complex apparatus which we know as the nervous system, which permeates and exerts its potent influence upon every organ and cell of the body, receiving from these certain important influences in return. Another necessity for healthy metabolism is an abundance of fresh air, which not only purifies the blood, but, in the process, supplies animal heat; to deprive the lungs, even for a few minutes, of air proves fatal. If to these two favourable conditions we add a copious supply of pure water, which

should be freely and unsparingly applied both internally and externally, we possess all that is necessary to sustain health and life in a perfect condition—with this proviso, that there be constantly present an abundance of sunlight which, as we know, is just as essential to the well-being of the animal as to that of the vegetable kingdom.

Let us now consider in what consists the essential product of this combination of factors, which is the vital agent concerned in the preservation of healthy cell life. There are distributed throughout the trunk, head, and neck certain glandular organs whose secretion has an important influence in this direction. This secretion, known as nuclein, is not only essential to the well-being of the gland itself, of which it forms an important constituent, but also performs an important office by virtue of its vitalizing effect upon the white corpuscles of the blood and every other cell of the body, those of the nervous system included. Moreover, the individual cells themselves would appear also to possess the power of secreting nuclein, though perhaps not in sufficient quantity to supply the full amount necessary to meet their requirements. It goes without saying, therefore, that,



if the cellular tissue is to be maintained in a healthy condition, the supply of nuclein must be ample.

I should mention that besides imparting vigour and vital energy to the body as a whole, nuclein also has an antiseptic effect upon toxic matter which may gain access to the blood by any channel, be it the skin, the air passages, the stomach, or the large intestine, thus inhibiting to a large extent the evil consequences that might otherwise supervene.

It is impossible to over-estimate the value of nuclein not only as a pre-eminent factor in its relationship to the preservation of healthy cell life, but as indispensable in the struggle that is constantly going on against disease germs. It stands to reason that if the blood is continuously being overcharged with toxic material, from whatever source this may be derived—and I maintain most emphatically that the most important origin we have to take into account is the large intestine—the functional activity of the various organs which provide nuclein must of necessity become seriously handicapped, and the amount of their secretion be accordingly reduced not only in quantity, but in quality also. From the same cause the vital energy of

the nervous system will necessarily become impaired, and therefore the stimulus supplied to organic life, which is essential to every organ and tissue, will be seriously interfered with. Thus, the whole animal organism suffers from the same cause, for it should be borne in mind that the potentiality of the nuclein is limited.

What, then, is nuclein? Nuclein I would define as the vital principle upon which every cell of the body is dependent for its existence as a living organism; nay, more, nuclein may even prove to be intrinsically life itself. It has been said that "the blood is the life," and doubtless, as being the vehicle by which nuclein is conveyed to the various tissues of the body, blood may have a claim to be so considered. But when we bear in mind that life is capable of existing without the presence of blood, it can hardly, in truth, be conceded that the blood is the life. Consider, for example, the germ from which life, both in animals and plants, takes its origin. This contains blood in no solitary instance, but it invariably contains nuclein. It is due to the presence of this nuclein, this vitalizing agent, that the germ, when the conditions are favourable, is enabled to germinate, and afterwards to develop into the animal or tree or

plant, as the case may be. Moreover, it is the peculiar proclivities inherited from its ancestor which in every instance influence reproduction of the peculiarities and characteristics of the structure that is eventually evolved. As development proceeds nuclein increases *pari passu*, but its nature remains stable, and never parts with the endowments it has received from its progenitor. Thus, this subtle essence, if it may not lay claim to be *the* life, may certainly yet be recognized as the medium by which life is originated and maintained, and not only the life but the characteristic attributes of that life. That nuclein is capable of reproduction is beyond doubt; also that it is the inherent property of each individual cell, and by virtue of its nature both emanates from it and again reacts upon it in a vitalizing manner.

It must be remembered that nuclein pervades everything endowed with life, from the tiniest fungus to the massive oak, from the microscopic animalcule to the monstrous pachyderm of the forest, throughout the whole vegetable and animal kingdom. Essentially, it retains its identity wherever it exists—that is to say, it is the embodiment of life in all. That it differs, however, in potentiality is evidenced on all

hands by the variety of animals produced and maintained through its influence. If we examine certain seeds, such as those of the fig and cress, for example—seeds of very different members of the vegetable kingdom—it is impossible to say which is which, however rigid may be our examination. Yet if these, apparently identical, be placed in a similar soil, surrounded by the same influences, and subjected to the same sunlight, and watered by the same rain, how different are the results! Yet the life of each is dependent upon the vivifying influence of an identical agent, though endowed with different powers in two instances. These two different potentialities continue from generation to generation to be exercised in the direction which has been followed without deviation from parent to offspring throughout the ages, and in one direction only. Notwithstanding this, however, we shall find that in the human body, where a toxic condition of the blood has produced a debilitating effect upon those glands which secrete nuclein, the organs can be materially assisted out of their difficulty by nuclein, derived from vegetable or other sources, being administered. It will, no doubt, appear strange—to some, at least—when I state that the most prolific source of

supply of this agent, for commercial purposes, is the microscopic yeast fungus, whose power of procreation—in a suitable medium only, however—is enormous. Vegetables of all descriptions, especially what we may term root vegetables, contain, as may be supposed, a considerable amount of nuclein, but if these are cooked in the ordinary way, not only is this vital principle destroyed, but their nutritive value also, and at the same time the vegetable is rendered more indigestible. The same observation applies to fruit and also to butchers' meat.

But, one may enquire, in what manner does nuclein act as an antiseptic, and thus become of importance as a foe to disease germs which may have gained access to the blood? In reply, I would state that this is due to a chemical agent produced by nuclein—viz., nucleinic acid, which not only is a powerful antiseptic but also provides a healthy stimulus to the cells, and thus promotes in them healthy metabolic changes. Moreover, it removes effete matter not only without hurt, but, as we have seen, with benefit to the healthy structure.

Thus we perceive that nuclein is not only an essential factor in the cycle of life in man and beast, but also takes its place as a most valu-

able therapeutic agent when derived from other sources.

For years past various gland substances, derived from animals, have been utilized in the treatment of disease, and, as we know, with considerable benefit, thus proving to what an incalculable extent the health of the body is dependent upon the abundant and healthy secretion of these organs. As we have seen, however, the functional activity of these organs, as well as that of the nervous system, is entirely dependent upon a pure and abundant blood supply, and these desirable conditions can only be maintained by a strict adherence and obedience to dietetic and hygienic laws. As I have repeatedly affirmed, there is no reason whatever for the amount of disease that at present prevails and is constantly bringing life to an untimely end.

Nature has amply provided the human body with means to combat disease successfully, but it is essential that we should not thwart her mandates. Moreover, she has not been parsimonious with her gifts, but has furnished sufficient provision to guard against risks that may arise from accidental infringement of her commands. This is every day apparent in the re-



cuperative and healing powers she bestows, so that, really, she cannot be said to draw any hard-and-fast lines. She is most orderly in her methods, every organ and tissue having its particular duty to perform. As we have seen, there is a common product secreted by the cells of various organs, but that it is of uniform physiological potentiality, is, I think, doubtful, though in two respects it would appear to be consistent; these are its antagonism to disease germs and its power of affording nourishment to the white corpuscles and the nervous system. It would appear that while it nourishes the latter, the secretion from certain organs influences its vital energy in given lines, and that which concerns us most at present is the effect the secretion of the thyroid produces upon those nerves which control healthy cell metabolism. That the thyroid gland is intimately associated with this has been demonstrated times without number, and it is interesting to note that the epithelium depends to a very large extent, if not altogether, upon the condition of this important organ, and therefore upon its secretion. Many diseases have been proved to be closely connected with the departure of the thyroid gland from the healthy standard, and have disappeared

under the administration of the uncooked gland of other animals; for cooking, be it borne in mind, invariably destroys the therapeutic properties of these substances. It is interesting also to note that when the normal epithelial cell has been deprived of this wholesome influence, it manifests a marked tendency to adopt a depraved form of existence, the most serious effect of which consists in a morbid change in metabolism. As I have already pointed out, it severs itself from those physiological laws which hitherto have regulated its cycle of life, and, taking advantage of its inherent, vigorous, active, and prolific endowments, casts off its benign nature, and becomes a malignant cell. Thereafter, setting up a colony opposed to healthy discipline, it prostrates, invades, and transforms into its own debased condition the neighbouring tissues. This we recognize as that dreadful scourge—cancer. We perceive thus that cancer is not the result of a microbe or parasite, as some have supposed, and as not a few continue to maintain, but is due to a perverted cell development resulting from a persistent ignoring of those laws which otherwise would have constrained the now diseased cell to retain its loyalty and allegiance.

## CHAPTER XXVI

## HYGIENIC MEASURES

IT is now an acknowledged fact that the Cancer Research Fund has proved a gigantic failure, and this, I am convinced, is largely attributable to the fact that its attention has been solely devoted to the local manifestation of the disease, instead of having, in the first instance, been directed to its natural history. If ever we are to succeed in stamping out this scourge, we shall be compelled to investigate the various conditions of the body which are invariably in evidence before the local manifestation makes its appearance. We shall take into account those contraventions of Nature's laws which have militated against healthy cell life, for it must be admitted that cancer is essentially and intrinsically due to perverted cell metabolism. Now, if an epithelial cell is possessed of such vitality, and I may add versatility, that it can be transferred from one part of the body to another, and even take up a habitat which is quite foreign to it, such as a muscle, without losing its

individuality, and can thereafter thrive amidst its new environment with as great ease as it does in its natural position, and, moreover, be enabled to continue its existence there without interruption, is it to be wondered at, that when it has undergone a pathological metamorphosis it should continue to retain this wonderful potentiality? When we are conscious of the fact that a cancer cell, which is admittedly derived from a normal cell, retaining the while all the attributes of its progenitor, possesses also a superadded virulence which it conveys to its progeny, can we be surprised at the incidence of cancer when the circumstances are propitious? The question now arises, what are those circumstances which tend to bring about this perverted cell metabolism?

These I think may be summed up as follows: First, an unwholesome diet; second, an unhealthy environment; and third, neglect of the sanitary condition of the colon. These I consider to be the three principal factors concerned in the development of cancer, but perhaps the most important of the three is habitual constipation, and this because, in addition to its own pernicious effects, it accentuates the other two. Errors in diet, however, exert a most powerful

influence, for it must be remembered that healthy cell metabolism depends not only upon an abundance of fresh air being admitted to the lungs, but to an equally great extent to the blood being supplied by nourishment derived from the *vital principle* of ripe vegetables, fruits, and other equally wholesome food stuffs, among which may be enumerated milk, cheese, and eggs. I do not for a moment insist that we should live *entirely* upon such articles of diet, but what I do maintain is, that a very large proportion of our food should consist of the products of Nature which she has so amply provided for our use, which the sun's rays have brought to perfection, and which cooking only succeeds in depriving, to a very considerable extent, of their most valuable properties. We shall find upon investigation that cooking invariably reduces the actual food value of fruits and vegetables by two-thirds,<sup>1</sup> not to mention the serious loss of the valuable

<sup>1</sup> In connection with this paragraph it is of interest to note that man is the only animal which cooks its food, and, moreover, he is the only animal (not to mention those under his domination, which are deprived, by dwelling in insufficiently ventilated houses and other buildings, of that amount of *fresh air* which is essential to their well-being) which is subject to the many diseases we have such palpable and constant evidence of.

salts they contain in their natural condition. We have abundant evidence on every hand to demonstrate the important part vegetables and fruit play in promoting healthy cell metabolism. We cannot reasonably expect a lamp to shine its brightest if supplied with unsuitable oil. With this it may certainly keep alight, and possibly continue to burn, in a way, for a time, but eventually the impurities will tell and the lamp become clogged, until at last it will go out. Whereas, had it been supplied with a pure oil, it would have continued to shed its light in a perfect manner indefinitely. So it is with the lamp of life. Supply it with proper fuel and it will burn clear and steady without consuming the wick and fouling the mechanism, or necessitating frequent cleaning operations, so often called for, which take the form of pills and nauseous draughts.

Cancer is Nature's protest against disobedience, and is the penalty she imposes upon those who, though, perhaps, more from the force of habit than knowingly or willingly, have ignored her teachings.

During the period, now extending over twenty years, that I have devoted special attention to this subject, with ample opportunity at my com-



mand for observation, I have never met with a single instance where constipation did not co-exist, and, moreover, had not been in evidence for a lengthened period prior to the manifestation of the disease. Furthermore, I do not believe that a normal cell will ever tend to develop a proneness to depart from its wonted integrity, or to sever its original relationship to its neighbours so long as the sanitary condition of the large intestine is maintained.

I am inclined to look upon the large intestine as the most pregnant of all the sources of blood contamination, especially when constipation is present. Now, the contents of the colon tend to be more or less of a noxious character according to the diet indulged in. The more simple and rational the diet the less menacing are the intestinal contents, and, therefore, the less liability is there to putrefactive infection. There is, however, another important advantage accruing from a diet which is in direct accord with what Nature has provided for our food—which is, that it favours not only a more sanitary condition, but a healthier activity of the colon. On the other hand, a more luxurious living, especially when a large amount of flesh meat is consumed, not only overloads the stomach with an excess of

unwholesome material, with which it is impossible for its digestive power to contend efficiently, but, at the same time, provides materials which undergo a highly noxious fermentation when they reach the colon. This invariably results in the development of innumerable poisonous organisms, which, finding entrance into the blood together with foul ammoniacal products, impair its vital energy to a very serious extent, and, when in excessive quantity, simultaneously prostrate the physiological activity of every blood corpuscle, cell, and organ of the microcosm. In consequence of this the general health becomes impaired, and the resisting power to disease markedly reduced. Now, if these conditions are supplemented by an unsanitary environment, in which may be included a vitiated atmosphere, a polluted water supply, neglect of cleanliness, insufficient clothing, exposure to cold, and so on, it will not be difficult to comprehend that much more disastrous results will, as a matter of course, inevitably ensue.

Did not Solomon say, "Go to the ant, thou sluggard; consider her ways and be wise"? He might have added with advantage, Go to the beasts of the field, the fowls of the air, the fish of the sea, and even crawling things, for a lesson

in common sense, and take an example from them in sanitary matters, and do not harbour in your insides offensive and disease-generating material which you would not tolerate for a moment within range of your vision or olfactory nerves.

I have on so many occasions endeavoured to give prominence to my views concerning the necessity of a daily and *complete* evacuation of the bowels as being a most important aid to the preservation of health, that it may appear to be superfluous for me to refer again to the subject. It is, however, in my opinion, of such paramount importance, that I do not apologize for reiteration, because I am convinced it constitutes a most potent predisposing cause to cancer, and is invariably in evidence where cancer crops up. Remember, I say "a *complete* evacuation every twenty-four hours must be insisted upon," for many people are under the impression that if their bowels are *moved* once a day, no matter what the character of the stool is, everything is satisfactory in this respect; whereas in innumerable instances which I have come across, I have, on close questioning, ascertained that the bowel has by no means been thoroughly relieved or emptied at the time. In these

instances the character of the stool has been quite sufficient to prove that the faeces have been retained for an undue length of time within the colon, the result being the greater portion of the liquid has been absorbed into the blood, and this we know cannot occur without interfering sadly with its purity. Hence every organ and cell of the body, which are dependent upon a pure blood supply,—if they are to be expected to continue in healthy functional activity—are handicapped *pro rata*.

To assist the daily evacuation of the bowels as well as the other excretory organs, such as the skin, lungs and kidneys, I am in the habit of prescribing a pint of hot water to be taken about half-an-hour before breakfast, a good opportunity for doing this being when one goes to the bathroom for one's morning bath. In this connection I may mention that I am not in favour of a person who has passed forty years of age going into cold water; on the contrary, the bath ought always to be warm, and should, I think, err by rather being too warm than not warm enough. The body afterwards should be well rubbed down with a rough towel, and by this means the healthy action of the skin promoted.

A great many people may demur in the first

instance to taking, what they consider, such a large quantity of hot water at once, but this difficulty is easily overcome. We must remember, that if this water is taken into the stomach, it must find an outlet, and it is impossible for it to accomplish this without carrying effete matter with it. In the majority of instances it has an excellent effect upon the bowels. Indeed it will frequently serve the purposes of an aperient, and with the advantage that, as a rule, it is followed by only one evacuation, this generally being of a satisfactory nature.

As I have before mentioned, it is of the utmost importance that everyone—especially those whose health is impaired—should sleep with their windows wide open, no matter what the state of the weather is, and that deep breathing be practised, especially in the morning, either by taking active exercise in the open air, or if this is not practicable, by inflating the lungs to their fullest capacity by forced breathing in a pure atmosphere.

## CHAPTER XXVII

## IMPORTANCE OF DIETETICS

As I have before remarked, it is essential that the blood be supplied with certain constituents derived from the vegetable kingdom, and that these be supplied in considerable abundance if the vital fluid is to be enabled to carry on its functions in a manner compatible with the health and vigour of the various organs and tissues of which the body is composed. This fact has been so frequently and satisfactorily demonstrated, that it were waste of time to bring further evidence to bear upon the subject.

Therefore with regard to the treatment of cancer, dietetics occupy a place of such importance that upon them we are bound to place considerable reliance if success is to attend our efforts; and the neglect of them will render futile both the therapeutic and hygienic precautions to which I have already called attention.

People talk of specifics for this disease, but it is only ignorance that permits one to suppose



that there can possibly exist any *single* remedy for cancer, for the palpable reason that its natural history precludes the possibility of the existence of such a thing. No, if we desire to combat the disease successfully we must go back upon its pathogenesis and endeavour to undermine, and destroy, those pernicious factors which have been so long at work, and have thus been enabled to disturb the physiological harmony, which, in health, exists between every cell and every organ of the body, and which is essential to the maintenance of the health of the organism as a whole.

In my opinion it is most unfortunate that so much money and time have been spent upon the vain endeavour to discover a specific for cancer, there being, as I have stated, no *single* remedy capable of acting as such. Hence, we have been disappointed to find that the trypsin treatment has proved a failure, the reason being that it did not take cognizance of the far-reaching predisposing causes of the disease. The same may be said of all other so-called specifics. As I have frequently pointed out, if we may ever hope to be able to treat cancer successfully, we shall be compelled, while endeavouring to overcome the local mischief,

to take measures to nullify the conditions which have led up to this, and not only subdue it, but adopt a line of treatment which will prevent its recurrence. We have abundant evidence to prove that in those countries and districts where a simple life is led—by this I mean, where the food consists of those articles which Nature has so amply provided, where the water-supply is good, and where the occupation of its inhabitants necessitates their employment, for the most part, being carried on in the open air—in such places disease of any description is rare, and cancer, as a rule, non-existent. Surely then, being aware of this, it is hardly necessary to adduce further evidence to illustrate the fact that cancer is undoubtedly the outcome of an unhealthy environment with its usual concomitants, these being to a large extent the bitter fruit of our so-called civilization. We are therefore of necessity compelled, unwilling though we be, to come to the conclusion that cancer is one of the many evils for which civilization is solely responsible. Indeed it may with truth be said they run in double harness. We should make up our minds, therefore, if our objective is to stamp out the disease, to retrace our steps and adopt more salutary

methods combined with a simpler diet. Moreover, I repeat, we shall find that, in the treatment of cancer, it is imperative that we place dietetics in a distinctly prominent position, as the success, or non-success, of our efforts depends very largely upon the observance or non-observance of certain dietetic laws. Let me, by way of illustration, place before my readers a summary of the instructions which I am in the habit of suggesting to patients suffering from cancer, that is as far as dietetics are concerned.

It is essential that the food should, to a large extent, consist of uncooked fruits, nuts, and vegetables, and that butchers' meat be completely avoided. I do not insist that no cooked vegetables or fruit be partaken of, but these should never predominate, as it is essential that the vital principle and unaltered condition of the chlorophyl be retained in their natural state, and that the vegetable salts, contained in all vegetable matter, remain as Nature has provided them. Cooking not only has the effect of reducing the nutritive value of all these articles, but renders them more indigestible, and induces the habit of neglecting *complete* mastication, which is a most important factor in the process

of digestion. Moreover, the living principle and the natural salts of fruits and vegetables are indispensable to the healthy vigour of the cells of our body, without which it is impossible for them to retain, or regain, their physiological activity. Milk, eggs, either switched up with milk, or in milk puddings or very lightly cooked, also cheese, are excellent adjuncts, but never to the exclusion, in any way, of salads, fruit, and nuts. Even unfired bread is to be preferred.

I have no hesitation in affirming that the tendency of the age is to depend much too largely on the flesh of animals for our food supply. It is quite impossible for our digestive organs to utilize the enormous quantities of flesh meat that are consumed at the present day, and I am convinced that this has a great deal to answer for when we inquire into causation of cancer and other diseases as well. This is especially evident when the occupation is of a sedentary nature, and conducted in a vitiated atmosphere, and where outdoor exercise is not sufficiently indulged in.

In support of the above statements I would call attention to the fact that in every instance, both in the animal and vegetable kingdoms,

when living cells are permitted to prey upon dead or devitalized material, their proliferation increases to an enormous extent. Now cancer in man is to all intents and purposes the product of an abnormally increased proliferation of certain cells, which have had substituted for their natural pabulum that which has been derived from dead matter; the result being that their metabolism has become morbid, and a pathological condition has replaced that which before was physiological, and therefore in harmony with health. In short, the continuous absorption of dead material into the blood has been productive of a soil incompatible with healthy cell growth, but highly favourable to this being transformed into an exaggerated form of life, carrying within it a malignant, in place of a benign, influence, and, by its contact with neighbouring tissue, subduing it and rendering it an easy prey to the invading neoplasm.

It is absurd to think that animal food is necessary to the upkeep of the human frame. The fact is, indulgence in it has a great deal to answer for in the promotion of constipation, the toxic condition of the contents of the colon, and therefore of disease in the many forms it assumes. For example, cheese contains, weight

for weight, double the amount of nourishment that beef does, and nuts, peas, beans of all descriptions, and oats, contain quite an equal amount to the flesh of animals. But far beyond their nutritive value are these to be preferred on account of their adaptability to the nourishment of the cells of the human body, which the carcasses of dead animals do not supply; on the contrary, they act as slow poisons.

There are three points I should like to insist upon, viz., thorough mastication of the food, so as to obtain a complete admixture of the saliva with it; a daily *complete* evacuation of the bowels; and living in a pure atmosphere. Where the teeth are defective, apples, vegetables, and nuts may be passed through a "Dana" machine—obtainable from Messrs. Bilson and Co., 88 Gray's Inn Road, W.C., or Messrs. Shearn, Tottenham Court Road, W.—which will make them much more easy of mastication. In this way most appetising salads can be prepared in an easily masticated condition.

One only requires to observe the evil consequences that arise from our present mode of life, in order to realize the folly of it; and, after all, it is only obedience to common sense I advocate, as our present manner of living is quite



contrary to the physiological construction and necessities of our bodies.

With reference to the kind of bread that is best for us, there can be no doubt that unfired bread is the most wholesome, but it is difficult to get the majority of epicures to adopt it as a substitute for baked bread. In these circumstances the next best is wholemeal, stone ground, bread. White bread, which is so generally consumed, is a very poor substitute, and should be avoided.

I may add that apples and carrots are especially excellent articles of diet, and should invariably enter into one's dietary.

The following examples will indicate how meals may be arranged:

#### BREAKFAST

Some kind of fruit, such as an apple, pear, orange, melon, or a couple of bananas, brown bread and butter, an egg and a cup of postum, which can be obtained at all food stores.

#### LUNCH

A fruit or vegetable salad, brown bread and butter and cheese, or an ounce of nuts of any description, instead of cheese.

## DINNER

1. Soup, the stock of which is made by boiling haricot beans, lentils, peas or broad beans, in a sufficiency of water and straining the liquid off.

When it comes to the table, and is ready for eating, a tablespoonful of carrots, onion, turnip, parsley, or celery juice, for each person, should be added, and seasoning to taste.

2. A little fish with salad of tomatoes, lettuce, cucumber, radishes or celery, or boiled sliced beetroot.

3. Macaroni au gratin or cauliflower au gratin. A milk pudding or cold shape with jam or marmalade and cream.

4. Fruit in its season and nuts.<sup>1</sup> There is no objection to stimulants in moderation if they are not objected to on principle, but these, and all other liquids, should not be taken during, but always after the meal is finished. It would hardly be in order for me to recommend any special brand of wine or spirits, but it is a matter of the greatest importance that these be of the best quality.

<sup>1</sup> There is no necessity to insist upon all the four courses I have mentioned, but fruit and salads should never be omitted.

When I give these instructions I do not for a moment wish to imply that other comestibles are to be abstained from, but what I do insist upon is that a considerable portion of the daily dietary should consist of foodstuffs in their natural condition.

So much importance do I attach to dietetics in the treatment of cancer, that I am quite convinced there are many instances in which regulation of diet may be proved to be the only treatment really necessary, always, however, with the proviso that it is conjoined with approved sanitary and hygienic precautions.

With all due respect I aver that we need never expect to enjoy the luxury of good health if we permit our natural and easily-satisfied appetites to be overruled and prostituted by what is termed the "culinary art"—an art, by the way, which is responsible for much disease, moral degeneracy, a desire for stimulants, sleepless nights, nervous decay, and early deaths, and indeed most of the other innumerable ills that flesh is said to be *heir* to, whereas, as a rule, they are self-inflicted, and can only be classed under the head of *penalties*.

Can anyone truthfully affirm that the glutton is a happy man? He certainly may appear to be

happy while he is gorging himself, but I am perfectly certain that he does not enjoy his meal of six or more courses any more than, if half as much as, the honest worker who comes home to his frugal but wholesome meal of, at the most, three courses, these being composed of wholesome and digestible foods. These to his simple taste are quite as acceptable as those excesses are to the pampered gourmand, whose debased appetite is excited not by healthy hunger but by savoury odours, which appeal more to the palate than to nature's demand. And to such an extent does he indulge himself, that sooner or later his poor ill-used stomach begins to rebel, and the messes which he has been accustomed to look upon as food commence, and continue, to pall upon him; the result being that in a short space of time he reaps the reward for which he has so diligently laboured by becoming an additional unit to the vast army of dyspeptics—every member of which is a wreck of what otherwise might have been a healthy man—with a future before him which is by no means a bower of roses, the thorns being too much in evidence. Depend upon it, if for the natural food of the stomach there have been persistently substituted the various concoctions

whose composition is often as mysterious as the names—supposed to be descriptive—that are applied to them, it will not be long before the inevitable consequences will manifest themselves in full force.

Does the question never arise—what is the meaning or rationale of all this folly? It is not congenital. We are perfectly well aware that man was not born into the world with this nonsense in his head, nor would it find access there were he taught to cultivate the best side of his nature. It is the environment, then, that would appear to make or mar the man, just as it is environment that tends to such an extent to make for health or disease as the case may be.

Does anyone for a moment suppose that the poor man, with sufficient for his daily wants, is not, intrinsically, as happy as the millionaire with his superfluity? Aye, and a great deal more so, I would unhesitatingly say with all confidence.

Our appetites were not planted within us that we might abuse them by over-indulgence, but that we might satisfy and gratify them judiciously and with discretion, and, I may add, exercise a wholesome restraint over them. Otherwise the health as well as the morals are bound

to suffer, and degeneracy to supervene. It is not luxuries that the body desires, but wholesome living, and were we to observe this and ensure sound and hygienic surroundings, these three essentials would tend in every instance not only towards health but to a happy longevity. It is when sensuality steps in, no matter what direction it takes, that evil results become inevitable.

To demonstrate the value of diet both as a prophylactic agent and also as an essential factor in the restoration of the health when cancer has asserted itself, the two following illustrations may prove interesting and also instructive.

#### No. 1

Miss S. aet. 45, whom I saw in consultation with Dr. O., the medical officer of a sanatorium, was suffering from carcinoma of the rectum which was of fifteen months' standing. The patient gave a history of chronic constipation and poor health for many years past, and her condition when I saw her went far to justify the prognosis which Dr. O. felt justified, from his point of view, in giving: viz., that the patient had not long to live; and I confess there was



little in her condition to warrant hope of recovery. Cachexia was a prominent symptom, and the emaciation was extreme. She was so weak that it was impossible for her even to sit up in bed.

The treatment consisted in placing her in a room without windows, or practically in the open air, where she remained day and night. The bowels, which contained a number of hard scybalous masses, were flushed every day by means of warm enemata of salt and water. The diet was restricted to uncooked vegetables, vegetable juices, fruit, milk, and eggs switched up in milk. She objected to anything in the shape of medicine, therefore none was prescribed.

The result was that within three months she had regained sufficient strength to enable her to run three hundred yards at a stretch, and had put on flesh up to her normal healthy standard, while all trace of the disease had disappeared.

#### No. 2

Mrs. D. aet. 50, the wife of a medical man, consulted me three years ago. She had a scirrhous of the left mamma the size of a golf ball, and there was a secondary deposit in the right mamma, about the size and shape of a chestnut.

The patient was put upon a diet which excluded all red flesh meat and consisted entirely of salads, uncooked fruits, whole wheatmeal bread, eggs, cheese, and occasionally a little fowl, game, and fish. The last, however, was only allowed to a limited extent.

As constipation had been long in evidence, particular instructions were given with a view to overcome this pernicious habit. Instructions were also given to practise deep breathing in the open air, to sleep with the bedroom windows wide open, and to drink a pint of hot water every morning on getting out of bed. Internal medication consisted in taking two palatinoids—each containing two grains of thyroid extract and three grains of mammary gland—three times daily between meals. Besides this I gave her an intermuscular injection of fifteen drops of thiodotoxyl three times a week for three months, when this was found to be no longer necessary, but the palatinoids and diet were continued. At the end of nine months all trace of the disease had completely disappeared, and she still remains in perfect health.

## CHAPTER XXVIII

## TREATMENT BY OPERATION

SURGERY hitherto has been the only treatment which has been generally adopted for cancer, and it is to the opinions of men who have given this subject careful attention that I propose to devote the following pages, only, I fear, to show how far from satisfactory the results have been.

Dennis, in his recent article on the "Treatment of Malignant Disease," states that "cancer in general causes nearly as many deaths in the United States in one year as are caused by accidents and injuries of all kinds and descriptions, and is responsible for more deaths in one year in this country than the sum total due to erysipelas, tetanus, hydrophobia, lightning, appendicitis, gun-shot wounds, and joint disease. Park affirms that if in the next ten years the increase of cancer mortality is maintained, there will be more deaths from cancer in New York State than from tuberculosis, small-pox, and typhoid fever combined. By way of emphasiz-

ing the extreme importance of early operation, it is stated that the cancer mortality of Philadelphia is on the decrease, due to the promptness with which operation is undertaken. However, with the best of surgery not more than 32 per cent. pass the year limit, and more often 40 per cent." This I do not believe.

In a very exhaustive and unprejudiced paper, Dr. E. T. Davies of Liverpool states that "a total of fifty-three cases of cancer of the uterus have been subjected to the operation of complete extirpation, with the view and the expectation—on the part of both surgeon and patient—of a radical and permanent cure." From what I can gather from his succeeding remarks the results were eminently unsatisfactory.

Dr. John Byrne, of Brooklyn, New York, states that the primary mortality among 1,273 collected cases had been 14.6 per cent. As regards the frequency and rapidity with which recurrence takes place after vaginal hysterectomy for cancer, even when the disease has appeared to be limited and circumscribed, Dr. Byrne says the ambiguous manner in which the statistical tables of vaginal hysterectomy have been constructed is so misleading, and, in some instances, so suggestive of erroneous inferences,

as to render the compilers open to the charge of *suppressio veri* or *suggestio falsi*, and the conclusion which he draws is as follows: "As the average period of life in cancer of the uterus, when not operated on, is not less than two years, and often more, suffering has not been lessened but aggravated, and life has not been prolonged but shortened, in the vast majority of all cases thus far subjected to vaginal hysterectomy." Dr. Byrne's subsequent experience during three more years is thus summed up in the "American Journal of Obstetrics" for October 1895:

"The field for vaginal hysterectomy in its application to uterine cancer, if indeed there can be one at all, is an extremely narrow one." When an operation is performed, he advises and practises supravaginal excision by the electro-cautery knife, and thorough additional cauterization of the bottom, sides, and edges of the excavation; in other words, "a *dry toast*." Dr. Paul Munde, of New York (*vide* "American Journal of Obstetrics," November 1895, p. 663), says he has performed vaginal hysterectomy for cancer of the cervix uteri twenty-four times, and that in every instance it was followed by a speedy recurrence. He formulates his present

opinion as follows: "I have made up my mind most positively that in no case will I ever again remove the uterus for cancerous disease, whether of the cervix or body, *per vaginam* or by abdominal section, unless the organ is so movable that any possible extension of the disease to its surroundings can be absolutely excluded." Upon the other side of the Atlantic, statistics of the remote results of hysterectomy for cancer may be as erroneous as Dr. Byrne alleges them to be. Upon this side, however, I do not believe that statistics are either falsified or manipulated.

Hysterectomy for cancer is extensively practised in London, and seems to be regarded with more favour in the Metropolis than in the provinces; but statistics which would enable us to judge the results are, unfortunately, not issued. Numberless authorities have described their individual methods of performing partial or complete hysterectomy for cancer, but the upshot of it all—the actual benefit obtained—is only lightly illustrated by a few selected cases. My distinguished countrymen, Sir John Williams, Bowreman Jessett, of the Brompton Cancer Hospital, the late Professors Wallace of Liverpool and Sinclair of Manchester, were all advocates of surgery in uterine cancer, but their



writings do not contain the facts which might support their advocacy. In 1902, however, we were supplied with a small sample of results—not remote, indeed, but at any rate final—of hysterectomy in true malignant disease, which may serve to explain the missing data of other authorities. Seven of the unfortunate series who had at that time died after hysterectomy, with recurrence of cancer, showed an average life of *fourteen months* after operation. Whether the other miserable cases, in which cancer was already recurrent, together with the quite recent cases, would alter this average for better or worse I am unable to say.

My own cases, three in number, were all dead within three months of the operation: one died fourteen days after, from what I suppose we must put down to sepsis; the other two from rapid recurrence; and I verily believe these women would have lived much longer, and infinitely more comfortably, if they had never been touched.

The statistics of German operators seem so grossly misleading that no wonder the late Sir W. Banks should have expressed the opinion that he did not believe them, and I quite concur with him in this unbelief.

I will give a few samples. At the end of five years Fritsch had 36 per cent. of cures; Hoffmeier had 33 per cent. after four years; Schauta had 47·3 per cent. of cures after two years. At the Dresden Klinik, of 80 patients examined *over* two years after operation, 45 had no recurrence; of 58 examined after three years, 58·6 were well; of 42 patients after four years, no recurrence in 59·5 per cent.; of 30 after five years, 60 per cent. were well; of 9 after six years, 66·6 per cent. were well; whilst 2 had survived seven years, and were well. Leopold states that out of 76 of his cases, 72 were well, and without recurrence, from one to five and a half years after operation.

If there be any truth in these figures, we are forced to the conclusion that either cancer in Germany and cancer in Great Britain are two different things, or that our respective diagnostic skill is a very variable quantity.

One important point which I think surgeons are inclined to overlook, and which to my mind accounts to a considerable extent for the recurrence of the disease after operation, is that they do not acknowledge that, previous to its manifestation, it must have lain in a latent condition for an indefinite period before its actual mani-

festation. Therefore, although the entire pathoplasm has been removed by the operation, which must of necessity have produced an injurious effect upon the vitality of the neighbouring structures, yet no means are adopted to remove the predisposing causes, which have been at work prior to the first manifestation. These means, in my opinion, ought invariably to be resorted to. A considerable period must necessarily elapse before the injurious effects due to operation can be removed. The part, as a matter of course, remains in a weakened condition, and therefore susceptible to the disease recurring, and in this way I am inclined to account for the secondary affections which so frequently occur, especially in breast cases, where it is possible the neoplasm is derived from a distant source.

In cutaneous cancer there is less liability to recurrence if the disease is removed in its early stage, and before the neighbouring structures have been involved. This more favourable result is, I think, accounted for by the fact of the disease taking its origin from a perverted cell action at the point where the disease commences its invasion.

So much was Sir Benjamin Brodie impressed

by his unfortunate experience in the results which he obtained, after having removed between 500 and 600 cancerous breasts, that he came to the conclusion he would never remove another without first laying before the patient the objections afforded by his experience. They may be summed up in the following words—that he found the practice rather tended to shorten life than to prolong it.

The late Sir William Mitchell Banks, I think, did more to prove the futility of surgery as a cure for cancer of the breast than almost any other surgeon. He took care to perform his operations in as complete a manner as possible. So far as he could ascertain, he left nothing where the disease could possibly lurk, yet in a total of 46 cases he showed a primary mortality of 13 per cent. Seventeen cases died of recurrence in less than three years, and only 7 cases survived three years, but how much longer they lived is not stated. Though Sir William Banks stated that there was no doubt of the prevalence of the popular idea that operating prolongs life, even when imperfectly done, he believed it to be a perfect delusion. He was also inclined to think that the deaths after reappearance are more pain-

ful than those where the cancer has never been touched. The mutilation that is necessary in these extensive operations upon the breast is so appalling, and the results have been so unsatisfactory, that one is not astonished at the decision the late Sir Benjamin Brodie arrived at.

Sir Watson Cheyne goes a step further even than Sir William Banks, and urges that not only should the breast and the axillary glands be removed, but that the pectoral fascia and pectoral muscles should also be swept away. Now, if such a proceeding appears to be necessary it is apparent that when the muscles have become involved an operation of any description is absolutely useless, as the spread of the disease within muscular fibre is so rapid.

Sir Arbuthnot Lane goes yet a step beyond Sir Watson Cheyne, and amputates the arm, excises the clavicle, and makes a flap from the shoulder to cover the wound, which is 9 inches square. In one case he made a *clean sweep* of the skin and all the subjacent soft parts off the sternum, clavicle, ribs, cartilages, intercostal muscles, serratus magnus, and the posterior wall of the axilla, cleared what he could of the supraclavicular space, but does not

say that he also entered the mediastinum; and, wonderful to relate, the patient recovered, but it is not stated how long she survived.

After what Sir James Paget stated regarding his view of the pathology of cancer, one is not surprised that in his lectures on surgical pathology he says: "I will not say such a thing as cure is impossible, but it is so highly improbable, that a hope of this occurring in any single instance cannot be reasonably entertained."

This statement, of course, is only compatible with his opinion that cancer in the first place is a blood disease, and, believing this, he must have looked upon operation in the above light. Are we to infer, then, that where any operation has proved successful the tumour has not been cancer, but a benign adenoma? Such a supposition is, I think, inferred by those surgeons who have, from the statistics, shown that a certain percentage of operations for scirrhus has resulted in complete restoration to health.

Mr. Thomas Bryant, in a paper read before the Royal Medical and Chirurgical Society, gave an analysis of 46 cases operated upon, and which survived the operation from five to thirty-two years. His "first group includes 17 cases of cancer of the breast relieved by opera-



tion, which are now alive, or have died without evidence of recurrent disease five or more years after operation; 4 have died, and 13 are living and in good health. Of the 4 who died, 1 succumbed to an accident, aged sixty-two, five years after the first operation; 1 from old age, aged eighty, twenty years after operation; 1 from acute jaundice, aged sixty-three, fourteen years after operation; and the other from intestinal obstruction due to gall-stones, aged seventy-nine, thirteen years after operation. Of the 13 cases which survived, one has remained free from recurrence for five years; 1 for six years; 3 for eight years; 3 for nine years; 2 for ten years; 2 for fourteen years; and 1 for sixteen years. Taking the whole group of 17 cases together, there was an absence of any evidence of a recurrent disease from five to ten years after the primary operation in 9 cases, and from five to twenty years in 8 cases, 13 of these patients being now alive and apparently well." Were all the surgeons able to obtain such satisfactory results as these, then we should be warranted in resorting to operation more frequently than we are inclined to do. Mr. Bryant describes his operation as follows:

"My routine operation is to remove the whole

gland that is diseased with the skin and fat over the diseased area; when the axillary glands are enlarged to dissect out the axilla and subpectoral spaces, and in every case, for examination purposes, to cut into the axilla and to take away glands or lymphoid tissue which appears to be suspicious, but otherwise not to dissect it out, my incision into the axilla skirting the axillary border of the pectoral muscle. I invariably drain the wound through the axilla for the first two or three days.

“The pectoral muscle I dissect clean, but do not remove it, although, should disease be found to have invaded the muscle, the diseased muscle must be freely taken away. I regard the removal of the muscle as a routine measure to be unnecessary, and the facts I now bring before you tend to support this view, for I am more impressed by accumulating experience that successful results in operations for cancer are more certainly to be secured by an early operation than by ‘performing tremendous operation upon practically hopeless cases.’

“I may say at once that it was from the careful study of Moore’s memorable paper on ‘Inadequate Operations on Cancer,’ published in 1867 in the fifteenth volume of the ‘Trans-

actions' of this Society, that I was led to deviate from the practice I had been taught, and to follow, as far as I thought right, in the lines of Moore's suggestions, which have been, without question, the basis of all recent operative procedures."

The following is also a quotation from Mr. Bryant's paper. "What I regard as a point of more importance than so-called complete or adequate operations is early interference, and in my sanguine hours I have imagined, with Sir Mitchell Banks, what the result would be if all cancers were thoroughly excised when they were no bigger than peas, or, as I would prefer to say, when the disease is in its very early stage.

"Indeed, I am fairly sure that it has been from my acting upon this principle that I am enabled to bring before you to-day the satisfactory results of treatment which my groups indicate; for in Group I, in which there are seventeen cases tabulated, the disease was in most of them in an early stage of development when submitted for operation. The disease appeared, when first I saw the cases, as a lump in the breast without skin implication or lymphatic glandular enlargement, and in which the

question arose as to the lump being due either to the presence of a cyst or early cancerous infiltration, for at this stage of the tumour's growth the question could only be settled by an exploratory incision."

In the spring of 1896 I read a paper before the British Gynaecological Society, giving an account of my experience of the treatment of cancer by means of thyroid extract, which was illustrated by a report of cases which had come under my observation during the previous four years. Some weeks afterwards a paper was published in the "British Medical Journal" by Dr. Beatson, a neighbouring practitioner, who advocated, in addition to the employment of thyroid gland, the removal of the ovaries. Of course, if it is the case that scirrhus of the mamma is developed from an ovarian cell which had migrated thither, it would be too late to remove the ovaries if the disease had actually manifested itself. On the other hand, removal of these organs might possibly prevent recurrence, assuming that my hypothesis is correct. There seems to be, however, considerable diversity of opinion upon the utility of this operation.

I take the liberty of quoting the following

extract, published by Dr. Herman in the "Lancet." He had previously reported a case of disappearance of recurrent mammary cancer after oöphorectomy and the continued administration of thyroid extract, the patient continuing in good health. This is a second case. "A woman, aged forty-five, had the right breast and axillary glands removed on 1 June 1895. Microscopically the growth was shown to be carcinomatous. On 21 October recurrent nodules were removed from the scar. In November 1897 she noticed a lump in the left breast. In July 1898 there was a depressed ulcerated surface over the right third and fourth ribs, with thickened margins; it was fixed to subjacent parts. In the left breast was a lump of stony hardness measuring  $3\frac{1}{2}$  by 2 inches; the nipple was drawn in. There were hard enlarged glands in the left axilla. Menstruation had become irregular six months before, and had ceased three months before.

"On 12 July both ovaries were removed; 5 grains of thyroid extract was given three times daily, and is still continued. On 5 August she weighed 12 st.  $2\frac{1}{2}$  lb. On 15 September she weighed 12 st.  $7\frac{1}{2}$  lb. The ulcer had healed, and the left breast was softer. On 14 October

there was no distinct lump in the left breast, and no enlarged glands in the axilla. On 28 March 1899 she weighed 14 st. 10 lb. The left breast presented the characters of health, except that the nipple was retracted."

The writer does not agree with Mr. Stanley Boyd that oöphorectomy alone explains the benefit. Four cases have now been published of cancer treated by oöphorectomy and thyroid extract; in three the cancer disappeared. The evidence goes to show that greater benefit results from the combination than from either separately.

The following paragraphs are quoted from the "British Medical Journal," and speak for themselves:

"Whilst reading the account of the interesting cases related by Mr. Butlin, in which oöphorectomy had alleviated or cured malignant disease of the breast, I was struck by the frequency with which thyroid extract was employed in the treatment. It seemed to me that perhaps oöphorectomy was receiving more than its fair share of credit, especially as in my own experience thyroid gland has been the means of completely removing all evidence of cancer in an undoubted case of malignant disease of the



uterus with secondary growths in the neighbouring viscera.

"The case to which I refer occurred in my private practice, and from my rough notes I find that Mrs. C., aged fifty-one, came under my care in July 1900, having been under treatment in a nursing home off and on for the previous twelve months.

"About two months before she came to me, Sir John Williams and Sir Francis Laking had, in consultation, decided that the case was one of malignant disease, and that it was too late to advise an operation.

"Upon examination I found all the signs of advanced uterine cancer to be present. There was a hard mass between the uterus and rectum, which bled easily: the uterus was fixed and enlarged. From the peritoneal surface on the right side there was a hard irregular lump, measuring 5 by 4 inches, growing upwards. There was a nodular growth springing from the lower border of the right lobe of the liver, and an enlarged gland as big as a marble in the right groin. The patient was extremely emaciated, confined to bed, and suffering great pain. There were the usual pressure symptoms shown by the other pelvic organs, and

occasionally a blood-stained discharge from the vagina.

“The only indication was to allay pain, and to render life endurable. Towards the end of November there was so much suffering that I asked Sir Francis Laking to see her again. We agreed that treatment must be directed wholly for the relief of pain, and that the case was rapidly nearing its end. A month longer seemed more than could be expected.

“I now determined to try the effect of thyroid extract. Commencing with 5 grains daily, the dose was quickly increased to 20 grains, with a result that was little short of marvellous. Convalescence began immediately, so that by the end of January the patient was up and free from pain. At this time the various growths were much reduced in size, and weight was being rapidly regained. When I last saw her in October she was quite well, and was following an active life; nothing abnormal was to be felt in the pelvis.

“I am, of course, aware of the danger of arguing from the result obtained in a single case, but in this instance the improvement followed so quickly upon the employment of the remedy, and was so striking, that in my own

mind I have not the slightest doubt that it was entirely due to its use, and I am equally certain that thyroid extract should always be given a trial in this class of case before more heroic measures are adopted."

The following two cases, recorded by Dr. Paton in the "British Medical Journal," appear to have been treated simply by oöphorectomy, and, a fair trial of thyroid extract not being given also, unfortunately, yielded only fatal results:

"The first case was a woman forty-three years old, who had been suffering from a rapidly growing tumour of the left breast for three months. The entire region was infiltrated, and the axillary glands were involved. The complete operation was performed, but the growth recurred in the scar, and ulcerated. The other breast also became involved. Oöphorectomy was performed, and the patient was put on thyroid extract, 5 grains three times a day. This, however, was continued for only three weeks; the treatment had no apparent beneficial effect.

"The second case was a woman thirty-one years old with extensive cancerous involvement of the breast and glands. All the cancerous

tissue was removed, but there was a speedy recurrence and the patient died."

If all the unsuccessful cases were reported, the slight and insufficient evidence in favour of the operation would probably be effectually and completely smothered.

## CHAPTER XXIX

### TREATMENT BY X-RAYS, ETC.

FROM a paper on the treatment of cancer, contained in the "Therapeutic Gazette," I quote the following: "The cancer formation may be ascribed to increased activity of the cells. This belief by no means negatives the idea that a cure for cancer may be found. Thus there are many instances of spontaneous retrogression; in some there has been disappearance of the cancer after ovarian operations, some have been cured by the X-rays, others by caustics, particularly arsenic, and by Coley's injections. A great many have been cured by wide excision.

"At the present time the only hope of betterment in the statistics of cancer principally lies in the general recognition of the fact that most

tumours in persons past middle life are malignant, and that the best hope of a radical cure lies in an immediate and entire removal. Even when removal of the growth can no longer be considered, there are certain palliative measures which are worthy of thought. The objects to be attained by the treatment of inoperable cases are the control of the putrid discharges. If haemorrhage cannot be controlled otherwise, then ligation of the arterial supply should be considered. Of the chemical caustics, the writer states that he finds zinc chloride solutions, 20 to 50 per cent., most efficacious. The cancerous cavities are packed with gauze soaked in these solutions. By the X-rays, epitheliomata, sarcomata, and carcinomata have been greatly benefited. The pain is sometimes relieved at once. Some cases have been apparently entirely cured."

In the treatment of cutaneous cancer the X-rays, as we are aware, have been extensively employed, but whether these rays act by any specific electrolytic effect upon the diseased tissue, or tend to restore the perverted cells to a normal condition by their actinic properties, it is difficult to decide. One thing is certain, that they frequently produce a transient effect

both upon epithelioma and rodent ulcer. In the "British Medical Journal" Dr. James H. Sequeira of London gives an account of twelve cases treated by him by means of the X-rays. Two were still under treatment and four under observation, the ulcers having been entirely healed, but I have not heard of any other such favourable result.

One case was a rodent ulcer involving the inner canthus of the right eye and part of the nose and cheek. This was completely healed in about two months, and three months later the scar was still perfectly sound.

Dr. Standback of Stockholm reports a case on which he began treatment on 15 September 1900. His case required thirty-five daily sittings of ten minutes each, at a distance of ten centimetres. The scar was still healthy one month after treatment had ceased.

In the "Boston Medical and Surgical Journal," 17 January 1901, Dr. Williams expresses himself favourably to this form of treatment of cancer, and reports improvement in cases under his care.

Dr. Andrew Clarke, in the "British Medical Journal," and Dr. George Hopkins, in the "Philadelphia Medical Journal," report that they



have had remarkable improvement in cases of cancer of the breast, where they found that the induration was gradually disappearing, the axillary glands decreasing in size, the pain diminishing, and the general condition of the patients improving. In no case now on record did any serious X-ray burn result. No other treatment was used in these cases.

Dr. Dawson Turner, Edinburgh, reports: "Instances of the successful treatment of cancer should be recorded. A lady, aged forty-five, consulted me on 1 July, 1902; she was suffering from a recurrent scirrhous of the mamma. The history of the affection dated back some years, and during the last thirteen months she had undergone four operations for its removal. On examination there was to be felt a hard swelling on each side of the scarcely healed cicatrix; the one swelling was about the size of a filbert nut, the other a little smaller. The skin was unbroken. Roentgen ray treatment was recommended, and after eight exposures of five minutes each both swellings had entirely disappeared, yet we do not hear of such excellent results nowadays.

"Eight other cases of cancer have been recently under my care, 4 affecting the mamma,

1 the larynx, 1 the lower jaw and mouth, 1 the side of the neck, and 1 the glands of the groin. In all of them marked and substantial benefit has resulted from the use either of the Roentgen rays or ultra-violet light."

Alga, in the "New York Medical Journal," states "that in those cases where the lymphatics have not been involved removal by some caustic will often be consented to by a patient that would refuse an operation, and that the results should be equally as good." He prefers arsenic to chloride of zinc or caustic potash, which give destruction to diseased and healthy tissues alike. I may say arsenic, whether used as a paste or a solution, causes a necrosis of cancerous tissue, and by the inflammatory action excited destroys the low vitality of cancer cells far beyond the range of its actual application, and in this way reaches outlying cells that would not be included in an operation by the knife. The result in the wound certainly is a foul one to the eye, but it rapidly fills in with granulations, and often gives a surprisingly good cosmetic effect. The great drawback about the knife is that it has no certain action when the lymphatics are involved.

There can be no doubt, I think, that of all

the caustics employed in the destruction of epithelial cancer, arsenic is to be preferred, and this from the fact that its action is comparatively of a mild nature, and does not appear to be sufficiently energetic to destroy normal tissue, yet is sufficiently powerful to produce necrosis in the more feeble cancer cells.

The late Dr. Leaf, in the "Edinburgh Medical Journal" of May 1891, bases a new treatment for inoperable cancer of the breast on the principle of preventing the carcinomatous cells, or the condition which causes their multiplication, from passing along the lymphatics, and invading the internal organs. He states: "There are two chief groups of cases which are suited to this treatment. In the first there is an ulcerating scirrhus adherent to the pectoral muscle, the axillary glands are much enlarged, matted together, and some perhaps firmly bound down to the wall of the thorax. The second group includes those cases where, after one or more operations, the growth has recurred in the pectoral muscle, in the lymphatic glands, or in both." He has devised a large vulcanite shield made to fit accurately on the skin around the scars or the recurrent nodules, as the case may be. At the bottom of the shield is fitted a broad india-

rubber inflatable tube exactly similar to that of an ether inhaler. The shield at the surface has a small tube to which can be adjusted an ordinary air-pump, by means of which the air in the chamber can be pumped out. It is essential that an accurate fit be made by a mould of the chest being previously taken. By the employment of this apparatus, he contends that the juice—whatever he may mean by this term—can be prevented from passing along the lymphatics, and consequently the cells, even if they do enter these vessels, must die from lack of nutriment, this result being effected by suction. His conception of the pathology of the disease is a refreshing variation from the monotonous repetition which pervades most standard text-books and German articles. It is also quite original.

To recur to the treatment by means of the X-rays, Dr. Stopford arrived at the following conclusions: First, that the X-rays were especially applicable in all inoperable cancers of the skin; second, the best results were obtained when the disease was confined entirely to the soft parts; third, that owing to the complete removal of pain and superior cosmetic result obtained, patients too readily assumed that they were well, and neglected to attend, and hence

recurrence might occur from failure to complete treatment; and, fourth, that the use of the X-rays was no obstacle, but a valuable aid to other methods.

Launois, in "La Semaine Medicale," reports excellent results in the treatment of incurable cancer under the influence of repeated hypodermic injections of hydrosulphate of quinine.

Tuffier noted a marked improvement in a huge malignant ulcer incident to hypodermic injections of cacodylate of soda.

Quenu laments the fact that both quinine and the cacodylate of soda were absolutely inoperative in his hands, whilst the serum of Wlaeff was even prejudicial.

Berger notes that this serum sometimes produces an improvement in the local and general symptoms, but that the cancer itself never shows the least sign of getting well, nor does he believe that there lies in any of the recently proposed medicaments and treatment against cancer the slightest hope of the discovery of a cure. Nimier is in accord with this observation.

Another treatment, which appears to have had very satisfactory results, has been employed by Dr. J. H. Webb, of Melbourne. It was based on the following theory: (1) All secretions

must have their uses; (2) consequently the loss of any secretions, save such as are needed for temporary requirements, must result in some sort of disorder; (3) all reproduction is subject to control, or else, given nutrition, it will be indefinite. "In obedience to this law," says Dr. Webb, "there must be something that must regulate the proliferation of the cell. It can only be a secretion subject to a higher power. This secretion is cholesterine, which is kept in solution by its natural aqueous solvent, soap. It is the loss of this soap that permits cholesterine to separate from the living cell and cell cancer to start. The uncholesterine cell is the uncontrolled cell."

He says: "If I were asked what is malignancy, I would reply that it is the crystallization of cholesterine from the living cell." His conclusion is that the cause of cancer must be the loss of the controlling effect of the cholesterine. He injected cholesterine dissolved in ether. It then struck him that, as ether evaporated, the cholesterine crystals reappeared, were absorbed, and were carried off in the urine.

After some time he found that soap was the natural aqueous solvent, and, accordingly, he dissolved some crystals of cholesterine in soap



solution, and injected it in this form. At the same time, however, he followed my practice and administered thyroid extract. This was a case of epithelioma of the face, which had been operated upon and had recurred. Under thyroid treatment, however, it got well in a month.

The second case was a cancer, for which the patient had half of his lower jaw removed. Dr. Webb injected the same solution as he had used in the former case, and the man rapidly improved. Dr. Webb, however, discovered that the soap solution of cholesterine was not a solution at all, as, unless the crystals be crushed, they will not dissolve. Accordingly, he employed a new solution, which he believed to be more perfect. The results were most disastrous, as the disease returned with great rapidity and the patient died.

His next case was one of malignant disease of the breast of two years' standing. He injected a solution containing cholesterine, but this again proved not to be a solution at all. He then administered thyroid extract, and in less than six weeks the whole tumour had disappeared. For fifteen months the breast remained well, when the patient returned with

a suspicious spot upon it. He injected, and in a few days a slough came away, leaving an ulcer the size of half a crown. The injections were continued, and the condition disappeared.

With this Dr. Webb seems to have discarded the cholesterine, but used instead a solution of soap for injection, together with the administration of thyroid extract. By these remedies he treated seven cases; three recovered, and four died. Two of the cases which died were advanced cases of cancer of the tongue, but in both the patients were relieved from pain. A fifth case died from an over-injection of the soap, whilst one case recovered in which the whole interior of the cheek and mouth were one mass of cancer. He states the soap solution is best made from Allen and Hanbury's superfatted soap; not more than a teaspoonful may be injected at a time, and various precautions must be adopted.

Now the question arises, Does the subcutaneous injection of a soap solution help in any way the disappearance of the cancer, or is the relief and ultimate cure due solely to the action of the thyroid extract employed in conjunction with it? I am inclined to think that there is some virtue in the subcutaneous in-

jection, but am of opinion that equally beneficial results would be attained, as I know they have been, by the subcutaneous injection of a weak solution of caustic potash in the neighbourhood of the tumour. As no possible injury can result from such a proceeding, there can be no harm in resorting to it rather than to operation; but I am convinced that no such treatment will prove efficacious until it is assisted by the ingestion of thyroid extract.

Other methods of treatment by subcutaneous injection have been practised, but, I regret to say, with very unsatisfactory results. Wlaeff, of St. Petersburg, as I have already noted, has discovered a serum the injection of which, he stated, would cure cancer. This serum he made from cultures of the blastomycetes, or formation extracts of cancerous tumours, and he employed it in a number of malignant cases, inoperable because of the size of the tumour and the extent of glandular involvement.

Berger and Reyenier placed a number of patients suffering from inoperable cancer under Wlaeff's care, keeping these patients under careful and almost constant surveillance during the course of the treatment. Though not able to note a cure in a single case, yet the patients

appeared to be greatly improved by the treatment, and felt benefited by it. The tumours seemed to diminish somewhat in volume. A cancer of the rectum exhibited a lessened tendency towards haemorrhage, several cancers of the tongue showed less salivation and oedema, there was a decided diminution in the amount of pain, several patients gained weight, and in others the progress of emaciation seemed to be checked. In each the malignant disease seemed to become for the time being arrested, but this arrest was never followed by a cure, nor was there any reason to hope or suppose that a cure would ultimately result.

Championnière points out that many other forms of treatment have been heralded as curative because of a similar arrest in the progress of disease. He notes that administration of magnesia has in his own experience been followed by this arrest, and believes he has even seen a cure.

Professor von Layden and Dr. Rummentoul have recently been engaged in experimenting on a treatment of carcinoma by cytolytic serum. This method of treating the disease was first suggested by Von Dungern. The results obtained by these gentlemen were recorded by

them on 4 September 1902, and although these cannot be accepted as very encouraging, yet they are sufficient to stimulate investigators to continue their experiments. Their investigations, however, go to prove that cancer is not of *external origin*, or that it is due to a microbe or a parasite, as some would have us believe.

They made several attempts to inoculate the lower animals with cancerous matter taken from human beings, but without success, yet in several instances they were able to transplant the disease from one dog to another. Having accomplished this, they produced their cytolytic serum by taking the growths removed from dogs and making an emulsion of them. They then injected subcutaneously this emulsion into rabbits. From this they in turn obtained serum, and studied its effect on a dog affected with cancer by means of a series of injections, which were continued for a period of several weeks. The growth in the dog was observed to shrink and soften, when it was ascertained on examination that fatty degeneration had taken place in the cells of the tumour. Subsequently the tumour completely dissolved and disappeared. In another case a cancerous tumour removed from

a dog was manipulated so that a fluid extract was obtained. This was subcutaneously injected into another dog suffering from the disease. In this case the cancer was in the rectum. The treatment was continued for two months, when it was quite apparent that the growth had undergone a process of softening, and become smaller. At the end of five months it had become reduced to the size of a small nodule. This was removed for microscopic examination, and was found to be truly carcinomatous. Experiments were then made upon three cases of cancer in the human subject, which were treated by a similar method. From a fresh growth a fluid extract was obtained, and experiments upon animals having shown that it was perfectly harmless, it was injected into the human subject. In two cases the disease was of many months' standing. During the treatment, though the tumour did not show any changes, yet no metastases developed, and the glandular swellings, which appeared to be infiltrated, at a later period completely dissolved; but the cases both proved fatal.

In another case of cancer of the uterus, a patient aged forty-two—who, when admitted into the hospital, was in an extremely weak condition, being unable to walk, and unable to



leave her bed—was first of all treated by the injection of goat serum from animals which had been treated with the extract for a week, after which she was treated by the extract itself. When under treatment, her general condition improved, and the cancerous growth appeared to undergo a process of degeneration. She remained in the hospital for ten months, during which time the growth remained stationary and the pain diminished, while she was able to leave her bed for several hours at a time.

I may here take the opportunity of drawing attention to the successful method inaugurated by my friend, Dr. William B. Coley, of New York, for the treatment of sarcoma. In this he relies upon the injection, subcutaneously, of a broth containing in suspension the mixed toxins of the erysipelas streptococcus and of bacillus prodigiosus. To be of service a pronounced reaction, creating a temperature varying from  $101^{\circ}$  to  $105^{\circ}$ ,—though it would appear that the latter should be the limit—should be induced. The therapeutic action of the toxins is brought about by promoting increased leucocytosis and the death of the coagulated growth. Whether this necrosis of coagulation and increased leucocytosis are due to a specific action of the toxins

employed, or to the high temperature induced, so far as I can see, is not quite clearly demonstrated. But the excellent results Dr. Coley and his *confrères* have obtained may suggest that it is of little consequence to arrive at an absolutely correct conclusion as to how these are achieved.

It is, however, I think, quite possible that the increase of temperature may be the real factor, and not any specific action of the toxins employed, seeing that the two agents from which these have been derived have previously been sterilized, and therefore a specific action can hardly be claimed for them.

My reason for introducing the above remarks is that it has been asserted that cancer has never been known to develop in any instance within seven years in a person who has been attacked by typhoid fever, so that it is possible the continuous high temperature which is characteristic of that disease may have the effect of exercising an inhibitive effect. This fact, however, does not detract in the least from Dr. Coley's valuable discovery, but only suggests that some other foreign agent introduced into the blood may answer equally well.

As Dr. Coley states, "a word of warning should be said in regard to the dangers attend-

ing the use of such a powerful preparation as the mixed toxins.

“It is most important to begin in every case with a very small dose, not over  $\frac{1}{4}$  minim (diluted with a little boiled water to insure accuracy of dosage). If the tumour in question is highly vascular, it is wiser to begin the injections remote from the same, until the susceptibility of the patient to the toxins has been ascertained. This varies considerably in different individuals. After a few doses it is safe, in most cases, to inject into the tumour itself.

“As a rule, when giving injections into the tumour, only about one-fifth of the dose used for injections remote from the tumour is required to produce the same reaction. The dose should be increased by  $\frac{1}{4}$  minim when given into the tumour; by  $\frac{1}{2}$  minim when injected remote from the tumour, until the desired reaction is obtained. The best results are obtained by doses sufficiently large to produce severe reactions, say a temperature of  $102^{\circ}$  to  $105^{\circ}$ .

“The frequency of the injections must depend entirely upon the strength of the patient, some being able to bear daily injections, while in others it may be unwise to push the treatment beyond three or four injections a week.

"In the successful cases the effect is usually very promptly noticeable. The tumour becomes smaller in size, much more movable, and very much less vascular. These changes appear very quickly, often within two or three days.

"The action of the toxins is both local and systemic. Sometimes the best results are obtained by giving the injections alternately into the tumour and remote from the same. In tumours in inaccessible regions, *e.g.* intra-abdominal sarcoma, or sarcoma of the tonsil, perfect cure may be obtained entirely by systemic injections."

## CHAPTER XXX

### THE THYROID GLAND

So long as medical men continue to pin their faith to the absurd doctrine that cancer is a local disease in the first instance, and therefore is only amenable to the knife, notwithstanding the fact, for fact it is, that the evidence all tends to prove the fallacy of such a theory, so long will the unwarranted, cruel, and unpitiful use of the knife continue to degrade the profession of

medicine. I am glad to add, however, that the tide is now on the turn, and I have every confidence in predicting, that before ten years have passed, even surgeons will look back with horror upon the indiscriminating and sweeping use of the knife in the so-called "surgical treatment" of cancer, which is prevalent to-day, but which is gradually being supplanted by more rational measures. The "Evening Standard" has remarked that "Experience constantly teaches that a fallacy, many times repeated without contradiction, earns acceptance by force of volubility." And this never proved more true than in the "follow-my-leader" ideas regarding the nature and treatment of cancer.

As I have frequently remarked, epithelial cells, in a healthy condition, possess most active, prolific, and versatile potentialities, and these are the cells which are principally concerned in the cancer process. As we are fully aware, the epithelial cells are essential, histologically, to all organs of secretion. Their recuperative power, if the blood be uncontaminated, is phenomenal. On the other hand if it be vitiated from whatever cause—this may be unsuitable food or drink, unsanitary environment, or prolonged retention of faecal matter—their behaviour is very

different. They not only assume a variety of forms, but perform various offices. They are, as we know, in some instances opaque, and in others translucent, and their uses in the economy of the animal kingdom differ according to the situations they occupy and the shapes they assume; but in every instance they are highly susceptible to irritation, in consequence of which, as we find, they become also susceptible to disease. Either this may be attended by the destruction of the cell, as in the cases of ulcers of various kinds, among which, by way of example, may be enumerated those due to scurvy, varicose veins, tuberculosis, etc.; or an undue proliferation of the cells may take place as in the case of psoriasis, pityriasis, the development of corns and warts, the latter of which, we are aware, frequently may take on malignancy if unduly irritated, and if the condition of the blood at the time be unfavourable to healthy cell metabolism. Now, if cells have become capable, from whatever cause, of departing from their normal physiological *rôle* of existence, and assuming a new and depraved condition, there is bound to be a reason for this. Moreover, there must co-exist an altered condition in the relationship of the cells concerned to the organ



dominating their conduct, long before the morbid condition induced has attained its acme, which it does when they assume a novel and malevolent character.

It is a well-known fact that the thyroid gland is the organ which is mostly concerned in regulating the life and health of the epithelial structure, but it is impossible for this gland to exercise its beneficent influence if it does not receive its nourishment and stimulus from a healthy blood supply. This is a most important point to bear in mind, because though only a temporary disability of the gland may follow an unhealthy condition of the blood, yet, if this continues for an undue length of time, the gland is bound to suffer permanently. We know that in cancer the thyroid gland is frequently found to be atrophied and therefore permanently incapacitated *pari passu* with the extent to which the atrophy has proceeded. Our aim, therefore, in the first instance, should be to restore the functional activity of that portion of the thyroid which has escaped disorganization, if we hope to re-establish its power and wholesome influence upon cell metabolism. If, however, the disease has proceeded beyond the point where recuperation is possible, and to the extent that

it is thereby incapable of performing its physiological functions with sufficient vigour, then the cellular structures which are dependent upon its healthy influence must necessarily suffer permanently; whereupon, no matter what method be adopted with a view to combat cancer, this will inevitably prove of no avail. If, however, on the other hand, no organic change has taken place in the thyroid, we can with certainty calculate upon its eventual recovery and resumption of functional activity.

In its healthy condition the thyroid gland secretes iodine, arsenic, and phosphoric bases, which play an important part in the formation of the skin and its appendages, such as hair, nails, claws, hoofs, and feathers; also the brain and the genital organs in the embryo, the excess of these substances being excreted in the form of menstruation in those females who have little hair upon the skin, as long as there is no foetus to consume it. The monthly catamenia in the human species is but a means of conveying from the economy the thyroid secretions which are abundantly discharged during the menstrual period in the unimpregnated uterus. Men are not subject to this because the renewal of the cuticle, hair, nails, and their equivalents is

sufficient outlet for the excess of products of the thyroid gland. These, as we are aware, after puberty are constantly growing and being renewed. The females of animals which are well clothed with hair at the time of heat do not suffer any loss of blood, while those animals which have little hair menstruate. It has been noted, that, in the case of certain animals, a very close relationship exists between the organs of reproduction at the time of heat and the evolution of certain parts of the body which undergo changes periodically, such as the antlers of deer, the combs of fowls, and the brilliant feathers which adorn certain birds at the mating season.

In the "American Veterinary Review," August 1906, it is stated by Weiland, that "especial epithelium plays the principal *rôle* in the foetal evolution of the ovaries and testicles, and that the features and hair are of simple epithelial nature. These anatomical analogies are strengthened by the functions of the thyroid gland, so that we can state with certainty that each moult, in the case of animals covered with hair or feathers, is only a means of drainage for the secretions of the thyroid gland which are eliminated in excessive quantities at the time of menstruation."

It has been ascertained that the female body

stores up everything that it can produce in the placenta, a part of which, in consequence of the gradual contraction of the uterus, enables this to some extent to be absorbed; but as a matter of fact a great portion is wasted at the time of delivery, this being a great loss to the body. We therefore find that in the female, even if it belongs to species to which flesh foods are usually abhorrent, there is an instinct to consume her own placenta. This is because it possesses a special value for her at the time. The consequence is, there is created a strong desire to eat and digest the after-birth. Now, it is an established fact, that females which can eat all or part of their placenta, recover more quickly, and the milk secretion makes its appearance more rapidly and is secreted in greater abundance under these circumstances. In the case of rabbits and guinea pigs for example, if we take measures to prevent these animals from eating their after-birth, it will be found that their offspring never attain full growth; the mammary glands are unable to secrete milk in sufficient quantities to supply the necessities of the young, so that under these circumstances they invariably perish.

Realizing then, as we are compelled to do

from the above facts, the important office which the thyroid occupies in the animal economy, it surely will not appear unreasonable to conclude that if from any cause its functional activity is interfered with, this must exert a prejudicial influence upon the tissue or tissues which are dependent upon it for their continuance in a healthy condition. So far as we are able to judge from our present knowledge, we are compelled to consider the origin of cancer as being closely connected with a disabled condition of the thyroid gland, from whatever cause this may arise. This, then, being conceded, our duty should consist in endeavouring to restore its functional activity, and this, we know, can to a large extent be accomplished by adopting certain dietetic and hygienic measures, supplemented by administering the active principle of the corresponding gland of healthy animals. Simultaneously, we should endeavour to destroy those toxic entities which have been and continue to be in evidence in the blood, and which have so far interfered with its integrity and vitalizing efficiency. To attain this desirable consummation there are several points which require careful and diligent attention, and which I will endeavour to point out to the best of my ability.

The question has frequently been put to me, "What do you consider to be the cause of the change which takes place in the thyroid gland which is coincident with the development of cancer?" My reply is that the thyroid gland is a highly vascular organ, and is dependent upon this vascularity for its ability to secrete its juices in sufficient quantity to fortify the blood with ample anti-toxic properties, thus enabling it to inhibit the pernicious effects of the toxins which it may contain, and which we know, if unrestrained, will act prejudicially upon every cell of the body, and will therefore render them liable to disease. In this connection, we must bear in mind, that the thyroid gland is a highly complex cellular structure, and if it be persistently supplied with a vitiated blood stream, it goes without saying that it must suffer equally with the other tissues; therefore, its functional activity will not only be impaired, but its cells become liable to disease and eventual destruction if the cause be not removed. In this way I would venture to explain the connection between the atrophy of the thyroid gland and the co-existence of cancer. It is therefore only reasonable to attribute a prolonged impure blood condition as the primary and most im-



portant predisposing cause of cancer. It is of the utmost importance in studying the pathogenesis of cancer, that we do not lose sight of the fact that the integrity of each individual cell is dependent intrinsically upon a pure blood supply, and, beyond this, that the blood contains certain ingredients suitable to its physiological necessities. It is in relation to this that dietetics come to play such an important part, because, to retain the cellular tissue in a healthy condition, it is essential that it be provided with pabulum which will meet its every necessity; that the diet be so regulated as to ensure this; that the environment be thoroughly sanitary, the water uncontaminated, and the daily *complete* evacuation of the bowels insisted upon, for we must remember that the intestines are not a *receptacle*, but a *channel* for the *rapid* passage of effete and decomposing matter.

## CHAPTER XXXI

### FUNCTION OF THE THYROID GLAND

HAVING glanced at various remedies that have been advocated for the relief and cure of the

various forms of cancer, it would not be out of place, I think, to call special attention to its treatment by means of thyroid extract. That treatment by this means has proved eminently successful is clearly demonstrated by the results obtained by myself and others, but it must be borne in mind that the thyroid gland must necessarily vary in its therapeutic power according to the health of the animal from which it is derived. Take the sheep, for example, and we shall find that in certain animals imported from New Zealand, and I think I am right in saying Australia also, the thyroid gland is of enormous size compared with that of the sturdy sheep of the uplands of this country, and according as the size of the gland increases, the active principle of it seems to diminish *pro rata*; while sheep fed on the low-lying and marshy lands of Lincolnshire are also, in a great number of instances, characterized by enlarged thyroids, in many of which the presence of spindle-celled sarcoma has been distinctly demonstrated. The thyroid gland of such animals, it goes without saying, could hardly be employed as a therapeutic agent. It is of the utmost importance, therefore, in selecting the thyroid gland as a remedy for cancer, or any other affection where

its administration has proved beneficial, that it should be derived from healthy animals, and at the same time that it should be ascertained to contain the active principle of the gland. The same must be said with regard to mammary gland, which I have found of the greatest service in the treatment of oöphoritis and myomata of the uterus. I know for a fact that the thyroid glands of animals killed in Chicago are collected, afterwards dried, and are sold as a commercial product. These may be, for aught I know, made up afterwards in certain forms and doses, estimated to contain a certain amount of gland substance, and then, without any guarantee of their therapeutic value, placed upon the market. Now, it is not difficult to comprehend that if such a method of dispensing this valuable agent is common it would be unreasonable to expect satisfactory or unvarying results. Messrs. Oppenheimer have succeeded in isolating what I believe to be the active principle of the thyroid gland. They have named this "thyrocol," and I have reason to believe that it is the most reliable and accurate preparation that is at present in the market. They have, for the convenience of the profession, enclosed it in palatinoids, which are guaranteed to contain

the equivalent of 5 grains of gland substance, so that one of these three times a day would be what I consider an ordinary dose. If, then, one cannot be assured of the fresh gland being perfectly healthy, it would be wise to have recourse to thyrocol. The question is of such far-reaching and vital importance that every precaution should be taken to procure the remedy in as perfect a condition as it is possible to obtain it. At the same time, I must confess, the safest course to pursue is to prescribe the desiccated gland, or an elixir made from this. In this connection I think it would not be out of place to devote a short space to the consideration of the function of the thyroid gland.

The doctrine of the "internal secretion" of the ductless glands appeared not long ago to explain satisfactorily the symptoms which follow complete removal or atrophy of the thyroid gland, on the one hand, and those accompanying its hypertrophy, as in exophthalmic goitre, on the other. In one case the internal secretion was considered deficient or absent, in the other excessive. Then Notkine claimed to have isolated a body from the thyroid gland named "thyroproteid," which gave rise to the symptoms of myxoedema, and a ferment named "thy-

roidin," the function of which was to neutralize the thyroproteid, or to convert it into a harmless body. All symptoms of a myxoedematous type were referred to "thyroproteidism"—that is, either to excess of thyroproteid or deficiency of thyroidin. The symptoms of Graves' disease were referred to "hyperthyroidation"—that is, either to deficiency of thyroproteid or to excessive secretion of thyroidin. The fact that a large goitre might exist without producing symptoms was easily explained on the ground that the quantities of thyroproteid and thyroidin present were in equilibrium. But these ingenious theories have not been proved, and it is now evident that the subject is much more complex than was supposed. Many cases are observed in which symptoms both of Graves' disease and myxoedema coexist in the same individual, and some authorities now reject the whole theory of internal secretion. In a recent number of "Virchow's Archiv" Dr. F. Blumm maintains that "the thyroid gland has no internal secretions, and that its function is to seize upon and render innocuous certain toxic substances which are constantly produced in the intestine and absorbed into the circulation." Sir Victor Horsley has shown that various animals bear

deprivation of the thyroid gland very differently. In rodents and birds no cachexia results. In ruminants and uniungulates cachexia appears very slowly. In man and apes the cachexia is constant, though of moderate severity. In carnivora it is most intense. Evidently the degree of cachexia depends on the kind of food and the metabolism peculiar to each species. Dr. Blumm has investigated the significance of this fact in the carnivora. "A number of dogs were fed for some time before thyroidectomy *exclusively on milk*, and the same diet was continued after the operation. Others were fed exclusively or chiefly on meat. The mortality among the latter was as high as 96 per cent., the animals dying in from two to twelve days of acute tetany and cachexia. The remaining 4 per cent. were immune to the results of thyroidectomy, whatever the diet. The results in the animals fed on *milk or milk and bread* were quite different. Forty per cent. survived the twentieth day after the operation, and 80 per cent. continued in good health *as long as the milk diet* was continued, but when meat was substituted many quickly died. When the substitution was gradual, the onset of cachexia was often slow, so that death, which resulted



from progressive cachexia or repeated convulsions, was postponed for weeks or months. Hallucinations, delusions, and other psychical disturbances were frequent. Sometimes, however, *in milk-fed* animals serious symptoms, such as tetany and convulsions, which supervened on thyroidectomy, were eventually recovered from, if the substitution of meat for the milk were made very gradually. A process of immunization appeared to take place, and the meat could be eaten after a time with impunity."

What is the cause of the more injurious effect of a meat diet compared with a milk diet in a dog deprived of its thyroid? It cannot be the extractives of meat. More than half the animals fed on milk developed cachexia and died; others, again, did well when fed on meat extract and milk, but died when meat was substituted for meat extract. It is not probable that meat is in itself toxic, and is normally rendered innocuous by the thyroid gland, for albumin does not enter the circulation unchanged. The evidence points to the production of *definite toxins in the intestinal canal* by the action on the food of certain definite bacteria. A meat diet favours their production rather than milk, possibly be-

cause the bacteria of milk inhibit the growth of the regular intestinal flora. It is these bacterial toxins of intestinal origin—"entero-toxins"—for which the thyroid gland normally has an affinity; it seizes, fixes, and finally neutralizes them. This is probably, according to Dr. Blumm, its sole function. Probably the toxins which arise in the course of a milk diet and a meat diet respectively differ in quantity rather than quality. Thus some thyroidectomized animals remained healthy on milk alone or on a combination of milk and meat, but perished when fed exclusively on meat. Again, suckling puppies, aged from four to six weeks, should *a priori* endure thyroidectomy well, but they invariably died with most intense tetany and convulsions. This proves incidentally that the thyroid gland is active from birth, and that its function cannot be vicariously performed by the thymus.

The possibility of immunizing thyroidectomized animals against the effects of the entero-toxins is of great importance. The few animals which survive thyroidectomy, though fed on meat, are naturally immune. Those milk-fed animals which after a temporary illness recover and eventually eat meat with impunity may be said to have acquired immunity. By injecting

the blood-serum of such an immune animal into an evidently dying meat-eating thyroidectomized animal, Dr. Blumm succeeded in prolonging life considerably. This proves that such blood-serum contains an immunizing substance.

Briefly, Dr. Blumm's theory as to the thyroid function is as follows: Entero-toxins are produced in the intestine. In the absence of the thyroid gland they produce symptoms of a myxoedematous type—tetany, cretinism, and other neuroses. In dogs degeneration of the ganglion cells and a characteristic interstitial nephritis were constantly found post-mortem. The thyroid gland seizes the circulating entero-toxins, and converts them into a fresh toxic substance containing iodine, named by Blumm "thyreotoxalbumin." This is the active substance of the thyroid gland, and is an intermediate product of its metabolism. It corresponds more or less to such artificially isolated substances as "iodothyrene." The *presence of iodine* is, however, accidental, not essential. It is not present, even in traces, in the thyroid of newly-born animals, and yet the gland is at that time in full activity. Thyreotoxalbumin contains iodine, merely because, like the syphilitic gummata, it has a great affinity for it. The

administration of thyroid substance, with its active principle, is followed by metabolic disturbances, which consist in disappearance of adipose tissue, rapid decomposition of albumins, and loss of water. But just as different animals react after thyroidectomy differently to the entero-toxins, the result of the injection of thyroid gland substance differs. Occasionally enormous quantities, such as twenty whole thyroids in six days, produced no effect on dogs, so that the animals could be considered naturally immune to the action of thyreotoxalbumin. Others, again, acquired immunity if the dose of thyreotoxalbumin was gradually increased. Immunity to thyreotoxalbumin does not go hand in hand with immunity to the entero-toxins, nor is the contrary the case; the two are quite distinct. The symptoms of Graves' disease and of "thyroidism" are, according to Dr. Blumm, probably due to incomplete thyroid metabolism, and not to over-production of a hypothetical internal secretion. The entero-toxins are seized and fixed by the gland, but escape into the circulation when in the intermediate stage of thyreotoxalbumin, and before they have been rendered completely harmless.

If the results of these experiments on dogs prove applicable to man, their clinical importance is evident. The production of enterotoxins may often be limited by a milk diet, and consequently the demands on an overtaxed or failing thyroid may be lessened.

## CHAPTER XXXII

### TREATMENT BY THYROID EXTRACT, WITH CASES

AMONG the predisposing causes of cancer of the uterus we may place everything which can contribute to depress the vitality of the organ. I refer specially to attacks of metritis, but more especially endometritis, resulting either from idiopathic or traumatic causes. If we bear in mind, therefore, the physiological relationship of the thyroid body to the womb, we may readily admit that the vitality of the latter may depend to a large extent on the integrity of the thyroid function. One is much more inclined to favour this opinion when one studies the results which many authors have obtained who have had a large experience in the treatment of myxoedema, and who testify to the fact which I have just

stated, that these cases have been frequently accompanied by metrorrhagia. It is the consideration of these which prompted me in the first instance to treat cancer of the uterus by the ingestion of fresh thyroid gland. It must be understood, however, that local treatment is not to be neglected. In the cases given in the present chapter this local treatment consisted of carefully curetting the diseased tissue, and afterwards applying tampons saturated in a 10 per cent. solution of ichthyol in glycerine at least bi-weekly. In the following chapter I shall describe a later method, which gives even more satisfactory results. Of course, I do not for a moment assert that these methods of treatment are a panacea; what I maintain is that they deserve to be placed on record, and will prove quite as reliable as the majority of remedies for other diseases.

When the disease has come under observation in its initial stage, the results have proved more than satisfactory, and in several instances, even where considerable inroads had been made, and where a favourable result could hardly be expected, the parts have been restored to their normal condition.

My argument is that in those cases where



surgical interference can with reason be looked upon favourably, this therapeutic method of treatment is almost certain of success, so that the ultimate condition of the patient is very much more satisfactory than if hysterectomy had been resorted to, while all the risks and anxiety of the operation have been avoided.

Besides the following cases of cancer of the womb, which I have treated by means of thyroid elixir and palatinoids, a number which attended at the out-patient department of the hospital have passed from under my observation, as they failed to report themselves when their symptoms were alleviated. I am, therefore, unable to give a complete report of these, so I will confine myself to a few of those private cases which I have kept under constant observation. I may add that many of the patients referred to are still in the enjoyment of good health, and though some of them are dead, yet not one of them, so far as I have been able to ascertain, has died of cancer.

I should like to preface my note of cases by stating that we should always endeavour to follow Nature's methods as much as possible, and not allow our attention to be too much diverted from the normal to the diseased tissue.

I mean by this that our efforts ought to be largely directed towards lifting the former up from a passive to an active state of existence, so that it may once more assume its lost potentiality and resisting power. Its circulation should be stimulated so that its nutrition may be increased, its physiological requirements fully supplied, and simultaneously local and constitutional treatment carried out.

Mrs. M., aged forty-eight, came to me in the summer of 1895, complaining of constantly recurring floodings, alternating with a copious purulent and offensive discharge. On making a vaginal examination, a cauliflower excrescence was brought into view. This I removed by cur-etting, and applied fuming nitric acid to the raw surface. She commenced to take a teaspoonful of Allen and Hanbury's thyroid elixir three times a day, and this she continued for three months. By this time all discharge had ceased, and her general health was much improved. I saw her on 18 February of the following year (1896), when, with the exception of a small slough that had come away, accompanied by the discharge of a little blood, she told me she had had no evidence of disease. As the womb was somewhat enlarged, and the stomach was evid-

ently being upset by the long-continued use of the thyroid elixir, I put her upon the elixir of mammary gland, which she continued with the same frequency and dosage for some time. I saw her again on 21 April, when she informed me that another considerable slough had come away, but this was unaccompanied by any discharge whatever, and although she was complaining considerably of weakness, she had no symptoms of local disease.

Mrs. G., aged sixty-five, was sent to me by her medical man on 10 December 1895. She was suffering at the time from a copious discharge of foetid pus, but she had previously been seriously exhausted by repeated attacks of severe haemorrhage, and was quite cachectic. Epithelioma had made considerable inroad upon the cervical tissue, and extended considerably beyond the cervix. As much of the diseased tissue as could be safely acted upon by the curette was removed, and a stick of chloride of zinc inserted within the canal. She was ordered to take a teaspoonful of thyroid elixir three times a day, and was sent home at the end of the week. Within a few days of her return she was seized by a severe flooding, which her doctor had considerable difficulty in checking.

Since then, however, she has had no more return of discharge of any kind, and at the present time there is no trace of disease remaining.

The following notes have been sent by her medical man: "Mrs. G., aged sixty-five, enjoyed remarkably good health all her days—in fact, until the recent illness, had never been a single day in bed, except during confinements. She first menstruated when she was fifteen years of age, and was always regular. She was married at the age of twenty-five, and has had ten natural confinements, all her children being alive. Her last child was born when she was forty-nine years of age, when she made an excellent recovery. This labour was as natural as any. The patient never again menstruated. The first evidence of her recent illness beginning was four and a half years ago, when she complained of a hot burning feeling in her external genitals and vagina, and great pain on micturition. These symptoms gradually got worse, but became greatly aggravated by severe backaches, so much so that she could only walk with difficulty. About eighteen months ago, the slight discharge which she had with the foregoing symptoms became increased, more purulent in character, and at times bloody.

"I saw Mrs. G. the following year, and since that time have had frequent opportunities to observe her various symptoms. The discharge being very free, she had lost considerably in weight and strength. Since she was under treatment by Dr. Bell, the discharge has entirely ceased, she is free from all pain and discomfort, has gained in weight, and consequently strength. In fact, she says she feels now perfectly well."

Mrs. M., aged thirty-one, came under my care in May 1895, suffering from carcinoma of the cervix. She took thyroid elixir for over two months, and had ichthyol tampons applied twice a week during the whole of this period. All symptoms of malignancy by that time had disappeared, and the health of the patient was better than it had been for years. The treatment was continued for two months longer as a precautionary measure. (This patient called upon me in May 1900, five years after the treatment was adopted, and was then quite free from malignant disease.) Dr. M. reports on this case on 17 April 1896, and states: "The cervix appears healthy with the exception that there is a very slight trace of erosion on the under lip, also a little mucous discharge, but very small in quantity." I may add that I again saw this

patient in 1903, when she was quite free from disease.

Mrs. D., aged thirty-one, eight years married, mother of two children, consulted me in 1896. She was then suffering from carcinoma of the cervix, from which there was exuding a copious flow of foetid purulent and sanguineo-purulent discharge. She was cachectic, and her general health was very much shattered. After some months' treatment, the symptoms of malignancy had quite disappeared, and I lost sight of her till the autumn of 1902, when she called upon me to inform me that she had been confined five months ago, and was anxious to know if her womb showed any signs of disease. There was, however, nothing even to indicate that disease had at any period ever existed.

Mrs. S., fifty-two years of age, who had passed the climacteric four years before, and who, though married for twenty-four years, had no children, consulted me in April 1901. She had been suffering for some years from disease of the womb, which had undermined her strength to such an extent that she was quite unable to perform her household duties. She had also become very much emaciated, and depressed both nervously and physically, while every func-



tion of her body was more or less in an enfeebled condition. A few weeks before she came under my observation she had noticed that the discharge, which hitherto had been characteristic of a simple leucorrhoea, had become mixed with pus, and was possessed of an offensive odour, which gradually was becoming more pronounced. On examination I found distinct evidence of epithelial cancer of the cervix, for which I immediately put her under treatment. The disease, fortunately, was not far advanced, and in ten weeks had completely disappeared.

Mrs. B., aged forty-seven, married, no children—whose sister died of scirrhus of the mammae a year after operation—came under treatment in 1896. There was a nodule about the size of a walnut in the left breast, with all the characteristics of scirrhus, and naturally she was in great alarm, seeing that her sister had so recently died from a similar affection. After six weeks' treatment the tumour completely disappeared.

Mrs. McD., aged forty-four, no children, with a similar tumour in the right breast, was quite well after three months' treatment, with the exception that a tendency to neuralgia remained in a part for some months afterwards, but this eventually entirely disappeared.

Miss E., aged thirty-five, also came under treatment in 1896. The tumour in this case was in the left mamma, and was about the size and shape of a pheasant's egg. It was accompanied by considerable pain, but after twelve weeks' treatment the tumour and pain both disappeared.

So far there has been no recurrence in any of these cases. It is hardly necessary to speak of more recent cases which have come under my care, so far as the chances of recurrence are taken into account. The following case, however, may be of interest because of the length of time during which the patient was under treatment before the tumour entirely disappeared.

Miss B., aged forty-seven, consulted me in August 1900. She had been informed by a surgeon that the only hope for her was in operation. This she, however, wisely, I think, refused to consent to. Treatment was continued from August till the following January before the tumour disappeared, but its progress seemed to be checked from the first. I saw the patient in October 1902, when the breast was perfectly normal. I have notes of many other cases, both of carcinoma of the uterus and mamma, which

have terminated quite as successfully as the above, but I think it unnecessary to occupy any more space with their details.

Of course, it goes without saying that patients frequently present themselves with the disease so far advanced as to preclude all hope of recovery; by their negligence, whether wilful or from ignorance, they have allowed themselves to drift beyond all surgical or medical aid. It is on this account that I feel it to be essential that everyone should be educated up to such a point that they will be enabled to recognize any suspicious symptom that may develop, and thus be induced to seek medical advice before it is too late.

## CHAPTER XXXIII

### TREATMENT BY THYROID EXTRACT (*continued*)

THE therapeutic measures which I have recently found to be of most service in the treatment of cancer, if the injunctions already given with regard to diet and hygiene have been rigidly carried out, are based first upon an endeavour to restore the functional activity of the thyroid

gland, secondly to introduce into the blood two chemical agents, both of which are antiseptic in their nature, and I think also tonic in their action. Formic acid appears to have a destructive effect upon the cancer cells, but it is difficult to administer it in sufficient quantity by the mouth, unless well diluted. To ensure this I have found the following prescription serve the purpose.

R. Acidi Formici	.	50 %	dr. ii. ss.
Glycerini	.		oz. iv.
Inf. Aurantii	.		oz. iv.

Ft. mist.

Sig.: Add one sixteenth part to a pint of boiled water and take this at intervals during the day.

For some time past I have in addition been in the habit of administering, on alternate days, a subcutaneous injection of a 10 per cent. solution of atoxyl, the dose commencing with 15 drops, which is increased every time by 2 drops, until 25 drops are reached, at which quantity the dose will remain until 15 injections are given, when they may be suspended for a week, and afterwards resumed at the full dose for another month. Of course the usual anti-

septic precautions are adopted, and it is well to remember that atoxyl is readily decomposed by heat and acids, so that carbolic acid must not be employed in sterilizing the syringe. Care should also be taken to avoid any toxic results, with which, so far, I have never met.

A very considerable number of cases have come under my care in which recurrence had taken place, as it usually does, in the cicatrix. In these circumstances I have found it advantageous to employ a 10 per cent. solution of thiosiamide of iodine as a solvent of atoxyl in place of water. This combination gives rise to no chemical change in the atoxyl, but on the contrary it has been proved, after many experiments, that the solution remains perfectly stable, though it is wiser, I think, to prepare only a small quantity of the solution at a time.

This combination, however, must on no account be looked upon as a specific, yet it undoubtedly has proved, and will continue to prove, of immense value as an adjunct in treating this disease, and I may add, it is entitled to hold a highly important position as a therapeutic agent. Moreover, it has had the effect of assisting the other means employed to such an extent, that now I am able to report recoveries

completed in the course of weeks, which previously would have taken months to secure.

For convenience I have named the 10 per cent. solution of atoxyl in water, "Aquatoxyl," and the 10 per cent. solution in a 10 per cent. solution of thiosiamide of iodine, "Thiodotoxyl."

The internal medication consists of a palatinoid containing three to five grains of thyroid gland, administered three times daily, one hour before or after meals. The object of this is to supplement the secretion of the enfeebled thyroid gland, and thereby assist healthy cell metabolism. Considerable advantage will also be obtained by administering the concentrated juice—extracted in the cold by means of a press—of nettles, spinach, lettuce, carrots, and other vegetables in wineglassful doses three times daily. These are procurable from various dispensing chemists, and as the juice is preserved by means of formic acid it will be unnecessary to prescribe this in addition.

Permit me to cite two or three instances to illustrate the above, and I desire to notify that, without exception, there was no doubt about the diagnosis, as this in every case was testified



to by eminent surgeons, and was, moreover, obvious from the symptoms which were present.

The first was that of a gentleman who had been suffering from carcinoma in the rectovesical septum, which, according to the diagnosis of three eminent surgeons, had been pronounced to be inoperable. The tumour when I first saw the patient attained the size of a large orange, and was accompanied by intense pain, whilst the patient's weight had fallen off to such an extent that his wife informed me he represented but a wreck of his former self. I may mention that his medical man, who accompanied him on his first visit to me, looked upon the case as hopeless. He very kindly, however, agreed to carry out my treatment to the letter, with the result that in two months the tumour had entirely disappeared, the place previously occupied by it, as his doctor expressed it, "being now completely empty."

The second case was that of a gentleman about 45 years of age, who had come home from India with a view of being operated upon for carcinoma of the omentum, which, when I first saw him, had attained the size, and assumed somewhat the shape, of a man's fist. His weight during the previous four months, had been

reduced by five stone, and he was so weak that it was with difficulty he could walk even the shortest distance. His emaciated condition enabled one to handle the tumour freely, and as a matter of course this assisted the diagnosis very materially. He told me he had consulted a well-known surgeon, who had advised immediate operation, which, from my point of view was not justifiable under the circumstances, seeing that the patient was in such a prostrate and emaciated condition. All arrangements, however, had been made for the operation to be performed on the following day. In the meantime the patient had stated his case to one who took an interest in him, and who urged him not to undergo the operation in the meantime, but to consult me in the first instance. I felt it my duty to place before the patient the serious risk he would be running, were he to submit to operative treatment, and that so far as I could judge surgery would be unable to save him. He thereupon asked me if I would be willing to give him the benefit of my method of treatment, which I agreed to, though I must confess with but faint hopes of success. At the same time I assured the patient that I considered his only chance lay in this direction,

and he agreed to take that chance. The treatment, therefore, was commenced without delay, and with the gratifying result that within ten weeks the tumour had completely disappeared, when he expressed himself as feeling quite a different man. He began to put on flesh, while his friends averred that he looked ten years younger than he did when he arrived in this country three months before.

Of course it may, and probably will, be argued that there is no guarantee that the tumour will not recur, neither, it will be admitted, would there be any guarantee in this respect if the surgeon had interfered. His efforts, however, would have been attended by much greater strain upon the man's vital forces than the therapeutic measures adopted, entailed. So it will not be difficult to conclude that the advantages are all on the side of the therapeutic method, as opposed to that of the surgical, in the treatment of cancer.

The third case was one of carcinoma of the rectum in a woman 65 years of age. This tumour was situated just within reach of the finger, and presented itself as an ovoid body about the size and shape of a bantam's egg, and protruded into the canal, occluding it to a marked

degree. It was giving rise to considerable pain, and difficulty in emptying the bowels. This patient was put upon a similar line of treatment as was adopted in the preceding cases, and within twelve weeks the growth was non-existent, while at the present moment the patient, that was, is perfectly well.

The fourth case was that of the wife of a bank official, who, according to the diagnosis of a hospital surgeon, "had a lump visible on the inner side of the left costal margin, hard, ill-defined, moving only slightly on the respiration, and tender on palpation. The vomitings were watery—'coffee grounds'—diagnosis—cancer of oesophagus and stomach, cardiac orifice." Her weight at the time was 5 st. 5½ lb., and in the beginning of January 1908, according to her husband's statement, she was given about a month to live. She then came under my care, since which time she has gained 23 lb. in weight; her stomach has recovered its function, and she is able to enjoy a prescribed diet, and is now apparently quite well.

I must state that these four cases, along with several others, with an equally favourable termination, occurred in the course of 1909. Fortunately, with one exception, no operation

had been performed in any of these instances, or I fear the results would have been different.

From time to time, during the past seventeen years, I have published a number of cases which have completely recovered under a similar line of treatment. Many of these had, previous to my seeing them, undergone operation, and in some instances had been operated upon more than once, and recurrence having taken place for the second time, the patients wisely decided to have nothing more to do with the knife. It was in 1895 that I first obtained satisfactory results, and I know that many of these patients are alive and well to-day, whilst others I have lost sight of. So far, however, I know there has been no recurrence in any instance amongst those with whom I have been able to keep in touch. Notwithstanding these facts I have been compelled to face the most strenuous opposition, from certain sections both of the medical press and of the profession in this country, which to say the least of it, is extraordinary, and certainly is not pleasant to contemplate. I am thankful to say, however, that the opposition is now being gradually and effectually overcome; for, whereas a few years ago I was obliged to stand alone, there are at present quite a number of medical

men, not only in this country, but in America, and on the Continent, who are only too glad to avail themselves of any rational method of treatment which appeals to common sense more than surgery ever has been able to do in the circumstances, and which, moreover, has proved of more lasting benefit so far as the treatment of cancer is concerned.

I do not need to remind my readers that in the present day such is the mania for operation, and so haphazard is the diagnosis in many instances, that unnecessary operations are not infrequently performed, by which, it is obvious, a nidus for cancer is provided, which otherwise would have been non-existent. In this connection I may be permitted to give an account of a case which came under my observation three years ago. It was that of a lady, who had been suffering from metrorrhagia for over two years, and who during that period had been under treatment by a well-known gynaecologist without obtaining relief. At last he informed her that she was suffering from cancer, and that she must have her womb removed. Now she is a highly nervous woman, and this verdict, as may be supposed, was a terrible shock to her and also to her friends, for she immediately con-



cluded that she had received her death warrant. After this blow had been dealt, she was brought to me, and a more miserable and woe-begone creature I have seldom set eyes upon. After a careful examination I was enabled to satisfy myself that there never had been the slightest evidence of cancer, but that on the contrary the symptoms were due to the presence of a small fibroid tumour, situated in the anterior wall of the uterus, the discovery of which, of course, gave new life to the poor patient. In accordance with my custom, which during the past seventeen years has given me most excellent results in such cases, I put her upon four mammary palatinoids daily, together with ten grains of calcium chloride in water three times daily after food, with this effect, that within two months the haemorrhage had practically ceased, and the tumour was barely perceptible. Since then there has been no further trouble, and the lady is now enjoying excellent health, indeed she has been round the world since the "cancer" episode.

It may prove interesting if I give a few extracts from letters which I have received from medical men who have shown some interest in the subject.

The first is from a well-known general practitioner in the North-West of London, who writes as follows: "The extraordinary effect of your treatment has been working in my mind for many days past. Of course I must adopt active measures in dealing with inoperable malignant disease. But the boon is of such value that I am considering the advisability of sending a strictly confidential letter to my bona-fide patients reporting the main facts of this case."

The second letter refers to a case of cancer of the rectum, and is from a medical man in the Midlands, who writes as follows: "You will be pleased to know, after about one month's trial of your remedies, that Mr. G. is much better, in many ways. He has regained hope, a very valuable assistance to a medical man. I examined the growth to-day for the first time since your visit: it is flatter and does not extend so far up into the lumen of the bowel: it is best described as a hard, firm, tubular sheath, it does not bleed now and causes less pain. I have begun the hypodermic injections of atoxyl. If there is anything else you would like to know I would be pleased to write."

The third is from a medical practitioner in

Wiltshire, who writes: "You have somewhat lately had under your care a patient of mine, Mrs. P., of S., who has had some nodules developing in the scar of her amputated breast. I have lately come across her and am pleased to see that your treatment has been successful. Could you kindly oblige me with some account of your treatment of such cases, or give me the name of the publisher of your book, 'Cancer, its cause and treatment without Operation.'"

The following is from a well-known medical practitioner in Sussex: "After twenty-five years of practice, during which time I have seen cancer in all its varieties and situations, and have never seen a cure in any single case either by operation or other means, it is somewhat startling to hear that cures are being effected, and one naturally begins to doubt the facts at first. That Mr. P. is improving, I have no doubt, but it is more difficult to get a patient to believe this, and still more difficult to get a patient's relatives to believe, than to believe it oneself. Even if Mr. P. does not get cured (and I believe he will), he cannot blind his eyes to the fact of the relief he has obtained, not to talk of the operation he has so far been saved. I have many professional friends here, and have talked over

the improvement in this case and the method of treatment. They listen quietly, but one can see that scepticism is present in their minds. Few men, especially surgeons, take much interest in remedies outside the knife, and if you talk of Violet Leaves, Formic Acid, Nuclein, etc., they think you are romancing and are rapidly developing into a condition which will eventually land you in Colney Hatch, or some kindred place. It was the same centuries ago, 'few believed though one rose from the dead.'"

The next is from a medical man in the Midlands, who writes as follows: "I thought you would like to know how Mr. T. is going on. He has had hypodermic injections of atoxyl every other day since July 27th"—this letter is dated 14 September—"and has taken your medicine regularly. The lumps in his rectum have got lower down towards the anus, but I think they are greatly modified in character, inasmuch as they are smooth and softer to the touch to what they used to be. If gaining weight, comparative freedom from pain, hardly any discharge, and looking better is any criterion that the disease is being overcome, then certainly it is in Mr. T.'s case."

The following letter is also from the Midlands:

"Many thanks for your letter and pamphlet; I am deeply interested in the subject. Anything which will do away with the useless operation will be a vast boon, although I am afraid the surgical part of the profession will be slow to take it up, as operating pays so well. Our patient is greatly improved. What age do you find most favourable for treatment?" This refers to a case of cancer of the tongue.

The following letter I have just received from Professor S., of Berlin: "Mrs. K. has been attended by me during the past six weeks exactly according to the directions given to her when she asked your advice regarding her cancer of the breast. I am very much satisfied with the results of the treatment. I can state that the tumour has grown remarkably smaller; the nodules are all flatter than before; a gland distinctly palpable on the edge of the pectoralis has become diffused and has nearly disappeared; the condition of the patient is equally satisfactory, the disease now being entirely localized and the tumour reduced in size."

It must be distinctly understood, however, that this method of dealing with the local manifestation of the disease, if ultimate success is to be attained, must, of necessity, be accompanied

by a systematic course of dietetic, hygienic, and therapeutic measures, or undoubtedly secondary invasion of the tissues will occur, just as it invariably does when surgery has had an innings. There is, however, one great advantage in my method over the surgical, which is, that the vitality and recuperative power of the part are not destroyed; this, without exception, follows the annihilation of the anatomy of the parts in what is termed the "radical operation," indulged in by so many surgeons, who insist upon having resort to it in the treatment of cancer of the female breast.

For a considerable time past I have been much exercised in my mind to account for the death of at least two cases of abdominal cancer, which had apparently completely recovered, as evidenced by the disappearance of the tumours, improvement immediately afterwards of the general health and rapid increase in weight, but who some months subsequently succumbed to a mysteriously and swiftly progressive anæmia. This I attributed to previous malarial infection. In another case, where this morbid condition was threatening, it was arrested by the administration of atropine.

I was induced to try the effect of this alkaloid



because of its known antidotal effect in cases of poisoning by certain fungi, which, when administered in consecutive minute doses, cause death by their toxic effect upon the red corpuscles, and eventually upon the heart's action.

Cancer cells, in the more advanced stages of the disease would appear to secrete a similar toxic material, this becoming more and more virulent as the disease advances, which, finding its way into the blood, accounts for its rapid deterioration and speedy death of the poor victim.

It would appear that the lower forms of living organisms possess the greater power in secreting poisonous substances. Take for example certain bacteria and fungi—some of the latter contain at least two deadly poisons, viz., muscarine and phallin. Phallin is a toxalbumin of extreme virulence and is also found in the rattle snake and other venomous reptiles.

Now as the cancer cell becomes more virulent in proportion to the length of its existence and consequent progressive advance to a more and more debased organism, it would appear to secrete a toxin of greater and still more potent virulence *pari passu* with the age of the disease. It is not difficult therefore to perceive how

essential it is to attack the malady with the greatest promptitude. In my opinion the secretion of the cancer cell bears a close relationship to that of the debased forms of plant life.

## CHAPTER XXXIV

### TREATMENT BY INJECTION OF FORMIC ACID

THAT cancer is a preventible disease there can be no doubt whatever, and that it is curable, in its early, and even sometimes its later, stages, I have proved to be equally certain. It is, however, not a specific disease, that is, it is not caused by a specific organism, and therefore there cannot possibly exist a specific remedy which, *per se*, will either arrest or cure it. Yet I am convinced that the injection of formic acid into the tumour will prove of immense service in destroying the cancer cells which have accumulated there, but this must never be resorted to without the greatest discrimination, and never in the neighbourhood of large arteries. This fact it has been my privilege to demonstrate on many occasions, and the following instance of its beneficial effect will, I trust, place its efficacy

beyond dispute. This was a case of sarcoma of the right testicle, which, when it came under my observation, had attained the size of a football. Moreover, there was considerable involvement of the inguinal glands. It certainly was not a promising one for treatment, and I submitted the case to several medical men, who were unanimous in this opinion. In the presence of some of these, I injected into the tumour two drams of a 50 per cent. solution of formic acid, and repeated this at intervals of a few days on two other occasions. This had the immediate effect of destroying the morbid cells, and within five weeks the tumour was reduced to the size of a tennis ball. In another month there was no trace of the disease remaining, and the patient has now resumed his usual occupation.

I should add that I do not invariably employ such a strong solution, but, as a rule, especially in cancer of the breast, inject a solution from 2 per cent. to 5 per cent. strength. During treatment it is my custom to supplement this by the intermuscular injection of atoxyl, which is described upon page 282. I also deem it imperative that a strict dietetic regimen be adhered to, that the bowels be completely

emptied every day, and that thorough ventilation of the dwelling be insisted upon.

Of course it goes without saying, that if the disease has proceeded beyond a certain point, and metastases have taken place, neither the injection of formic acid, nor any other local treatment, will prove successful; that is to say, if the secondary deposits are beyond reach or numerous. On the other hand, I have known of many instances where the dietetic and hygienic measures referred to, in conjunction with inter-muscular injections of atoxyl, have been sufficient to effect a cure, and I have also on record many instances where recurrence after operation has been overcome by the same means.

The following examples may prove to be interesting. It must be borne in mind, however, that each patient had previously been placed upon a dietetic, hygienic, and therapeutic regimen, to which the closest adherence had been given.

Miss M., aet. 55, had been suffering from a rapidly grown scirrhus of the left mamma for some months before I saw her. The tumour had then attained the size of a hen's egg, and the axillary glands were also involved. After two months treatment of diet, etc., combined

with intermuscular injections of 25 drops of a 10 per cent. solution of atoxyl, though the general health improved, and pain abated, yet the tumour and glands remained very much *in statu quo*. I therefore determined to inject formic acid which, within two weeks, resulted in complete enucleation of the morbid growth, also softening and absorption of the axillary glands which were injected at the same time.

Mrs. K., aet. 52, who had been urged by four surgeons to have her breast removed for a scirrhus which had attained the size of a tangerine orange, with secondary deposit in the axilla, recovered after three months of tri-weekly intermuscular injections of atoxyl, together with the usual therapeutic measures which were continued for eight months.

Mrs. B., aet. 50, and Mrs. H., aet. 45, were suffering from recurrent scirrhus in the cicatrix and its neighbourhood. Both had intermuscular injections of thiiodotoxyl three times a week for over three months. They were also ordered to carry out implicitly the dietetic, hygienic, and therapeutic measures invariably prescribed in every case of cancer. Within six months the disease had entirely disappeared.

A case of fungating cancer of the penis

after some weeks of tri-weekly injections of atoxyl, together with the usual general measures referred to, had injections of 15 per cent. solution of formic acid, made into the base of the growth, which was completely thrown off within two weeks after the first injection.

Though I am able to quote many other equally satisfactory cases of recovery which have been accomplished under this method of treatment, one must not imagine that it is universally successful, and this applies more especially to cases that have been operated upon, in which the anatomy of the part has been destroyed, and therefore the recuperative power sadly interfered with. Failure also in many instances is to be ascribed to the disease having advanced to such an extent that it would be unreasonable to expect anything but a fatal termination. If, however, patients would only present themselves early enough hope need never be abandoned.

It is no spirit of boasting, but only of gratitude, which induces me to affirm that there are old patients of mine living to-day who were the subjects of cancer, and, moreover, were pronounced to be incurable by independent medical men in 1894, and many more from that date onwards.



I may be excused for repeating that cancer is the culminating point of a series of conditions arising from a disregard to hygienic, dietetic, and sanitary laws, the implicit obedience to which is imperative if the physiological harmony of certain organs which control healthy cell life is to be maintained. Otherwise a morbid metamorphosis is certain to supplant normal cell metabolism. That is to say, certain cells—especially the epithelial—while retaining their active and versatile potentialities and their wonderful procreative powers assume an aggressive nature, and instead of being content to derive their nourishment solely from the blood, as heretofore, commence to prey upon their neighbours, thus becoming cannibal, so to speak. Now, a change of such serious import in their mode of life cannot but exert a potent influence upon their secretions. These, therefore, though normally benign and conducive to healthy vigour, become gradually but surely completely altered in character, and must, as a matter of course, in consequence, exert a baneful influence, not only upon their immediate environment, but upon the glands in their vicinity. These, as a sequela, become involved in the disease process, the consequence being that new colonies of

morbid cells become established, from which, by means of the lymphatic channels, and also by the blood-vessels—which are liable to become involved—the disease is carried to more distant organs and tissues.

While considering this, we should bear in mind the condition of the blood, which in the first instance gave rise to the change from the healthy to the morbid condition of the cells primarily affected, and which, in all probability, was, to no little extent, super-induced by an injury of one kind or another, whereby the part was weakened for the time being, thus reducing its power of resistance to the morbid influence. Now this being the case, does it not stand to reason that our chief attention should be directed to the removal of this blood condition, which was the predisposing cause of all the mischief?

## CHAPTER XXXV

### TREATMENT BY MAMMARY GLAND EXTRACT

ABOUT the same time that I commenced experimenting with the therapeutic properties of thyroid gland in the treatment of cancer, my

attention was drawn to the close physiological relationship which the uterus and ovary bear to the mammae by numerous instances presenting themselves to me, where in ovarian disease the mammae underwent certain vascular changes a day or two prior to the advent of the menses.

It is a well-recognized fact that an active condition of the mammary glands after parturition exercises a powerful influence in promoting involution of the uterus. It was a natural inference, therefore, that possibly the administration of healthy mammary gland substance might produce a beneficial effect upon the ovaries and uterus if these were diseased. I therefore instituted a number of experiments, and administered mammary gland substance in cases of fibromyomata and hypertrophy of the ovaries, obtaining in a large percentage of the cases so treated gratifying results. A number of these cases I have given details of in a paper which I read in the spring of 1896 before the British Gynaecological Society in London, on which occasion I made public my treatment of cancer by the administration of thyroid gland substance. More than seventeen years, therefore, have elapsed since I first published the results obtained by means of these two substances, during which

period I have had increasingly frequent opportunities of observing the beneficial effects obtained. In the autumn of 1896 I contributed a paper on the same subject to the International Gynaecological Congress, which was held at Geneva, giving details of other cases, and in the autumn of 1899 I read another paper at Amsterdam, dealing with a further series of cases, which had been favourably influenced by this treatment; and I may here add that no recurrence has taken place in any of the cases which have come under my observation so far.

In discussing the treatment of fibromyomata by this method, I should like to draw the attention of my readers to what I consider to be the pathogenesis of these growths. My impression is that myomata of the uterus have their origin in a blood-clot. But it must be remembered that if blood is effused into a healthy tissue it will not coagulate, and will speedily become absorbed. On the other hand, it must be borne in mind that blood, when effused into an unhealthy tissue, tends to coagulate. Therefore it is essential, before coagulation can take place, that a diseased condition of the tissue into which it is effused must have previously been in existence in order that the catalytic condition

necessary to cause coagulation be present. Now, we have learned from experiments that an inflamed tissue possesses this catalytic power. I hold, therefore, that previous to the formation of a fibroid within the uterine walls these must of necessity have been the seat of inflammatory action, either acute or subacute. The rupture of a bloodvessel or the isolation of blood within a sinus, under such conditions, would result in coagulation of this blood, whether it be effused or retained within the sinus. This coagulum, being enclosed within living tissue, would, in process of time, become organized, and thereafter attach itself by a nervous and vascular connection with its environment. In circumstances favourable to its development (and these would consist essentially in a congested and flaccid condition of the walls of the uterus), it would tend to increase in size, and the neoplasm would, as a matter of course, resemble somewhat in its structure the surrounding tissue, and while the weakened condition of the uterine walls remained, the neoplasm would continue to grow. Nay, more, under favourable circumstances its growth may be stimulated, and thus the growth of the tumour increase until it attains considerable dimensions. On the other hand,

the neoplasm may remain in an almost stationary condition, and not increase in size to any marked extent.

Those who have studied the subject carefully are aware that myomata of very small size may frequently exist in considerable numbers without causing any inconvenience, this fact often asserting itself in cases even where an undue growth has taken place in one or more similar neoplasms contained within the walls of the same uterus. So far the myomata have obtained the ascendancy over the vital vigour of the uterine walls. Does it not, then, appeal to one that if the tone of the uterine walls can be re-established, and thus the vitality of the uterus elevated above that of the adventitious structure, we may be able to reverse the order of things, and obtain absorption of the abnormal growth? The fact that the uterus has been enabled in many well authenticated cases to accomplish this led me to infer that if by any means sufficient vigour could be imparted to it, it might be enabled by therapeutic assistance to accomplish this desirable end. That this happy result has been in a very large number of instances attained, not only by myself, but by others, is beyond dispute.



One eminent gynaecologist in London informs me that in a course of treatment extending to thirteen months a myoma of the uterus, giving the appearance of a full-termed pregnancy, completely disappeared under the administration of mammary gland. Several reports from other medical sources have likewise been sent me, all of an equally favourable nature, from practitioners both of this country and of America. My own experience has been sufficiently satisfactory to warrant me in placing a most unhesitating reliance upon this method of treatment. I maintain, therefore, that it would be wrong not to give it an extensive trial before operative measures are resorted to, as it can do no possible harm, and so far as I am aware no evil results have ever been the outcome of the administration (even if it has been continued for a prolonged time) of this gland substance.

With regard to its beneficial effects upon ovarian disease, my experience has been very extensive. I have seen painful ovaries as large as billiard balls reduced to their normal size in the course of two or three months, with a simultaneous disappearance of the pain. I am quite within the mark when I state that I have treated over 200 cases of ovarian disease by

this method, and with most gratifying results, so that there can be no doubt of its usefulness. Of course, I do not for a moment aver that in every instance a complete restoration of the parts to their normal condition will be established, but if this constitutional treatment is conscientiously carried out side by side with local treatment of the uterus, if this organ be in an unhealthy condition, I am quite certain the results will not be disappointing.

## CHAPTER XXXVI

### PROTEST AGAINST OPERATIONS

IN dealing with the treatment of this disease, I would ask, as I have frequently done before, how is it possible that, weakening a part to the extent that is the case, anything but serious mischief can result from the ruthless application of surgery as at present advocated—in the course of which tissues of the greatest importance are removed and the vascular supply reduced to a minimum? The pitiless mutilation can have no other result than an enormous reduction of the power of the part to resist disease, which fact

experience places beyond all doubt. Indeed I would go farther, and have no hesitation in affirming that an actual nidus for disease is thereby produced which otherwise might never have existed. There is one case I have in my mind which amply demonstrates this. It was the case of a strong healthy lady who was nursing her baby, and her breast therefore was in full functional activity, when unfortunately a mastitis appeared with considerable induration surrounding it. This was diagnosed as cancer, to my mind a most extraordinary opinion to give, when there had been no previous indication of such a condition, which, in the very nature of things, could hardly have developed so rapidly in an organ, which, as I have said, was in *full functional activity*. Notwithstanding this, without even time being taken to consult or obtain the consent of the patient's parents, the breast and the axillary glands, which were, as is usually the case in mastitis, sympathetically affected and enlarged, together with the muscular structures covering the thorax, were remorselessly removed, so that nothing but a covering of skin remained; the thorax having been denuded of every other tissue down to the ribs, which proceeding is euphemistically termed the "radical

operation." The consequence was, that within a week or two, the whole of the extensive area, through which the knife had ploughed its ways, was a solid mass of scirrhus; and I am convinced that this is not a solitary instance where mischief of a like nature is the outcome of these unwarranted operations. This may appear to be strong language to employ, but I am doing no more than my duty in giving expression to it, being fully convinced of the futility, nay more, the crime, of operative measures in such circumstances.

Permit me to give another instance of the same kind, which, fortunately for the patient, ended in a much more satisfactory manner. This was a case in which a lady, unmarried, of about thirty-five years of age, came to London one day from the provinces to consult me with reference to the condition of her breast, which had been diagnosed as a rapidly growing cancer by two eminent provincial surgeons who had advised immediate amputation, assuring her that delay, even for a day, would be dangerous. I may say that she was a vigorous, healthy woman, and of course was very loath to submit to such drastic measures without further advice. She therefore came to me for the purpose of obtaining this. On examining the mamma I

could find no trace of carcinoma, and with little difficulty came to the conclusion that the morbid condition was a simple mastitis, which had, as is usually the case, induced a septic inflammatory condition of the axillary glands. I advised her strongly not to follow the advice given, but to apply antiphlogistic measures for a few days and to come back to me in a week. In the meantime I wrote to the surgeon who had arranged to do the operation, giving him the facts of the case from my point of view. He wrote back to me, saying that "the idea of a mastitis had not escaped him, but that he was confident there was malignancy behind this." He was, however, quite willing to wait a week or ten days to prove who was right. The result was that before the time had elapsed, all the suspicious symptoms had subsided, and, when upon my advice the patient again presented herself for examination, the surgeon, to his credit, admitted to the patient "that Dr. Bell had been right after all." The lady afterwards spent some weeks on the Continent, and came to see me a few days after her return, when there was nothing abnormal to be detected in the organ which so narrowly had escaped amputation.

This is only one of many instances of a like nature that I could recount. No wonder then that, as Dr. Bashford recently remarked, the death-rate from cancer in females above thirty-five years of age is so high, seeing that in the majority of instances the death is due not so much to cancer as to operations which are so freely indulged in, whether the case be cancer or not. In every instance the consequent mutilation is so extensive and damaging to the vitality of the parts, that if there is the least tendency to cancer, either from prolonged constipation, errors in diet, or an unhealthy environment, which are all predisposing causes to the disease process, then, a nidus having thus been provided, the chances are that the disease, which might otherwise have remained latent, will tend to burst into activity within the weakened tissues. This possibility has evidently been overlooked by the Cancer Research Fund, and is quite in keeping with all the other futile efforts that may be placed on the credit side of the thousands of pounds that have been spent upon this colossal failure.

In view of the above facts, I was distressed beyond measure at the extreme methods recommended by members of the surgical section of



the British Medical Association at the meeting held at Sheffield in 1909. Each speaker seemed to vie with his predecessor in his advocacy of the knife as a curative agent, and various contrivances were advocated to overcome the evil results which necessarily follow upon the destruction of the anatomy of the parts; for, strange to say, all these inevitable results were evidently foreseen by those who advocated the most drastic proceedings to eradicate a disease which never yet in any single instance has been, or ever will be, cured by the knife.

Nay, more, the surgeon, in every instance in which he advises operative measures to be resorted to in cancer, is surely not unaware that in advocating such a method of treatment he is pursuing a course which, as a rule, tends to aggravate his poor patient's sufferings, shorten life, and, what is equally regrettable, reduce the chances of recovery should therapeutic measures be called into operation after the knife has failed, as it always has, and always will.

But to return to the remarks on the diagnosis of tumours of the female breast, which was discussed very freely at this meeting, it would appear that correct diagnosis did not matter much, for it was remarked by the surgeon who

opened the discussion that "If at the operation the surgeon is still in doubt between a cyst or mastitis, or carcinoma, and if the lump is in the outer hemisphere, it is a good plan in the first instance to make the curved incision below and external to the lump." Then he goes on to say—"If no cyst is visible, the lump should be cut out and examined apart from the breast." Now, I ask, where is the warranty for operating in such circumstances, when, confessedly, he is plotting in the dark? What right has he to insist upon removing, or even interfering with, an innocent growth which is causing no serious inconvenience, and which if properly treated would give rise to little or no further trouble? The whole of the opening remarks in this discussion are interspersed with confessions of the *difficulties of diagnosis*, when in reality this expression is made the plausible excuse for future proceedings. Yet on every hand operation is insisted upon, notwithstanding the fact that, in the majority of instances the surgeon is operating without knowing what he is operating for. My conviction is, and it is strengthened by the remarks which I listened to at that meeting, that scores of mammae are removed where not the slightest suspicion of cancer

exists. And I have had ample evidence of this fact over and over again.

Just one more quotation from the same speaker: "Considerable difficulty may arise in saying whether the indurated areas are due to a chronic inflammatory sclerosis of the breast tissue or to carcinoma." And then he goes on, without the slightest compunction, to advocate, that "in such a case the whole breast in the first instance be removed, *after which* the indurated areas should be carefully sliced, in a good light, in search of the characteristic appearances of malignant disease." And then he continues: "Fortunately a mistake in the diagnosis is not specially serious." It may not be "serious" for the surgeon, but it will be difficult to convince the patient that it is not serious for her.

The patient's welfare—and I say this advisedly—would appear to be not, at least, of primary consideration. The advice, or I would say the command, is, the breast must come off at once, and in the majority of instances the poor terror-struck victim consents, and has been operated upon, before she has time to realize her position or consider how dreadful the consequences may be. These are left for her to

discover afterwards, for be it understood—and I am quite convinced on this point—that in many instances there may exist a predisposition to cancer without this manifesting its actual presence, and which would have remained latent, had not an exciting cause been established either through an injury, prolonged irritation, or loss of vitality due to the organ—as in the female breast—suffering from its functional activity being in abeyance. How, then, I ask, can anyone conscientiously advocate the drastic operation so generally adopted by men who know perfectly well that the proceeding will, in every instance where cancer is in evidence, end in disaster? I confess this is beyond my comprehension or ability to answer.

If, with such facts before us, my protest against operative interference in cancer does nothing more than reduce, to even a slight extent, the number of these operations, it will have conferred an inestimable benefit on humanity; but when I add that therapeutic measures, which I advocate, have a much larger proportion of cures to their credit than surgery has ever been able to obtain, and that the general practitioner has no difficulty in carrying them out, I feel that I am more than justified in

passing censure upon the unjustifiable interference of surgery in cancer. Does not the surgeon confess his impotence when he makes it an essential condition in his treatment of the disease that his operative measures must extend far beyond the actually diseased area? Why, I ask, should he feel it his duty to advise this, and act upon such a principle, if he is convinced the local manifestation is, *per se*, the disease? Upon the same principle he might take the flesh off the whole body, as he can never be certain, from his point of view, that he has entered into tissue which is unaffected by the disease. Does he not unconsciously, though perhaps unwillingly, admit by his action that the disease, in the first instance, and long before it has manifested its presence in a tangible form, has been present in a latent condition and only required some untoward circumstance to enable it to develop its malignancy in a given part? or why should the same amount of irritation in one individual result in the appearance of cancer, while in another an equal, or even greater irritation, would pass off without any evil effects whatever?

In my opinion the only circumstance in which anaesthetics and antiseptics have proved to be

a curse, rather than a benefit, is in the case where surgery interferes in the so-called treatment of cancer. Admittedly the disease attacks a part of the body that has been either injured or subjected to prolonged irritation of one kind or another; but though this injury or irritation is the *exciting* cause of the disease, it goes without saying that there must have been some original *predisposing* cause, the removal of which is obviously essential, if we are to hope that the patient will recover. How then, I ask in the name of humanity, is it possible to eradicate such a disease by the knife?

The surgeon, however, seems to conclude that he has done his duty if he has succeeded in removing what was simply an outcrop of the disease, thereby creating an injury of infinitely greater magnitude than that which was the primary exciting cause; but, unfortunately, he does not take into account the necessity of endeavouring, at the same time, to adopt measures calculated to remove those pathogenic conditions which are really the essence of the disease, and which, if left unheeded to assert their presence and continue their influence, will have rendered his operative measures worse than useless. Notwithstanding this, operations



continue to be the order of the day, as they have been from time immemorial, the surgeon the while ignoring the fact that worse than failure invariably succeeds these operative measures; and, moreover, that it has been proclaimed, in no unmeasured terms, by teachers of the highest eminence, that the knife has never succeeded in curing cancer. Indeed, one eminent surgeon has declared it to be a crime to operate for cancer.

Moreover, it would appear that the most skilful and eminent of British surgeons—Sir Frederick Treves—has tacitly acknowledged that operative measures have hitherto signally failed in the treatment of cancer, or surely he would not have cast it aside, as he would seem to have done when he advocates the employment of radium as a substitute for the knife, in the employment of which he is admittedly *facile princeps*. If this succeeds even to a limited extent, I am convinced it will prove of inestimable value and, moreover, will have the desirable effect of reducing the number of ruthless and worse than useless operations which are daily taking place. Therefore I trust that the hopes which have been centred upon it will be amply realized. Yet while I heartily wish every success to radium, its

employment unfortunately is only possible at an almost prohibitive cost; and I am convinced that even when it succeeds in arresting, or even destroying, the local manifestation of the disease, yet to effect a complete cure it will be essential to supplement it by coincidentally adopting measures which will overcome the *casus morbi*. Therefore therapeutic, dietetic, and hygienic measures must necessarily simultaneously receive the most careful and unremitting attention, in order that those conditions of the blood which have, by interfering with healthy cell metabolism, led up to the possibility of the disease asserting itself in a concrete form, may be overcome.

It has been stated on excellent authority that *nævi*, moles, and other disfigurements have been made to disappear under the influence of radium, but on the other hand an equally trustworthy authority states that the disfigurement produced by the cure is worse than that of the original condition. Again, if electrolysis is produced in a tumour by either of these agents, there is, I am informed by a well-known electro-therapist, considerable risk of blood poisoning supervening, this being due to absorption of toxic material from the disintegrated tissue. This, unfortunately, has also been my experience.

There are two points at this juncture to which I desire to call special attention. The first is, that in recurrent cancer it is improbable radium can prove of permanent benefit, and I am unwillingly inclined to fear that in not a few instances it will prove a signal failure just as X-rays have done. The second point is, that even if all that is claimed for radium becomes an accomplished fact, in many instances identical and much more rapid and satisfactory results—as I have proved—are attainable by means of formic acid. Moreover, formic acid, of a suitable strength, varying from 50 per cent. to 5 per cent., when injected into a malignant growth, is possessed of a destructive power upon the morbid cells, destroying these while the normal cells are left intact, if a suitable strength has been employed, and this is all that is claimed for radium. Formic acid has the following advantages, viz., it is more rapid in its action and infinitely less expensive than radium is ever likely to become; but it requires to be used with great discrimination and care, and always in a highly diluted condition in the neighbourhood of large vessels. The application of superheated air under a pressure of two to five atmospheres has also considerable advantages over radium.

It goes without saying that if I have proved my case and demonstrated that cancer is more amenable to therapeutic measures than it is to the knife, my conclusions are not likely to be received by the operating surgeon with the enthusiasm which, undoubtedly, they merit. This, however, will not be the case with the general practitioner, who will be quite as able as anyone else to carry out the treatment in all its details.









